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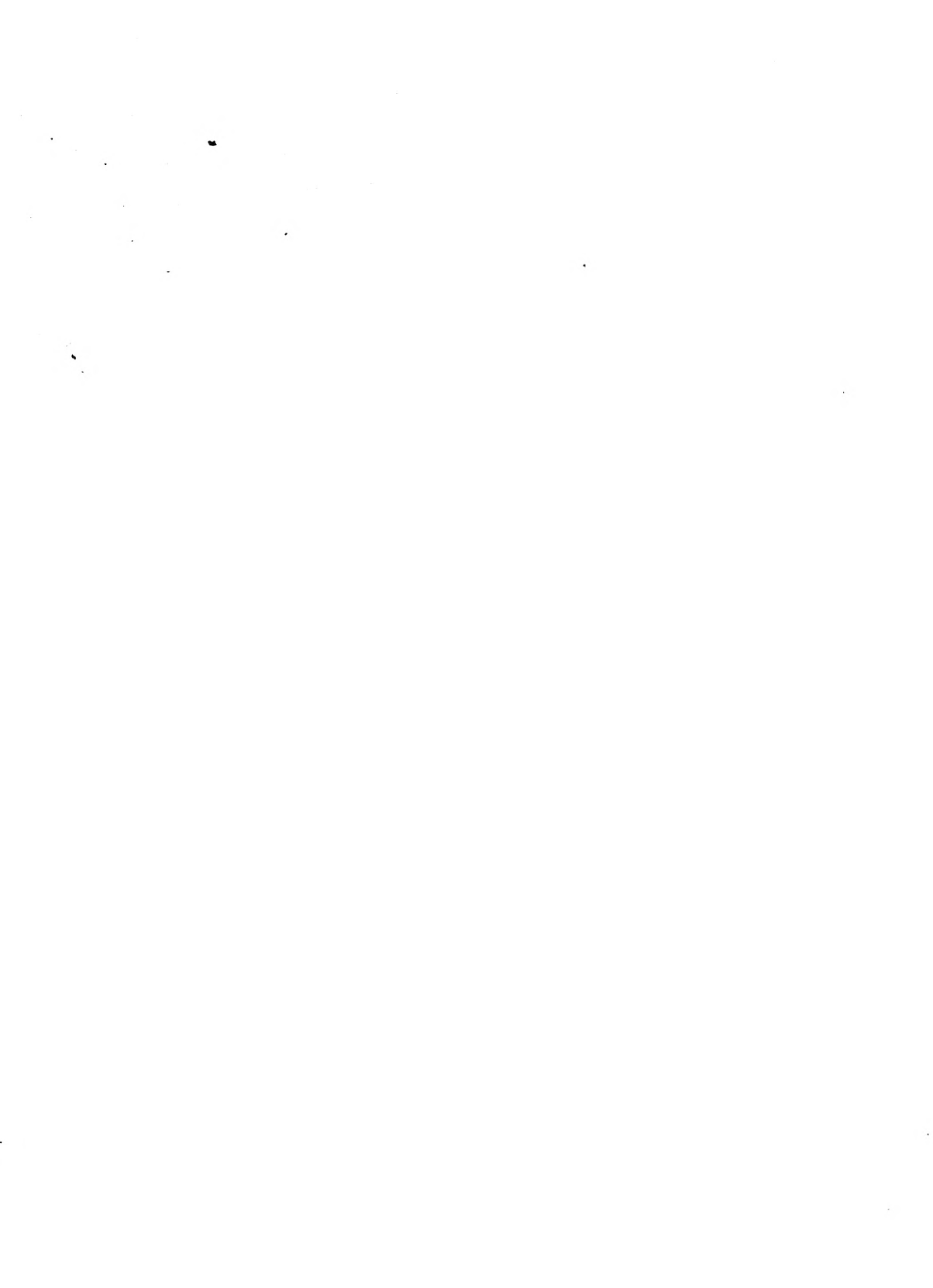
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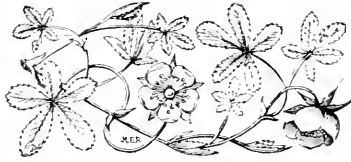


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WEST DEAN.

THROUGH the courtesy of W. James, Esq., the lovely grounds of West Dean are open to the public on Tuesdays and Thursdays during the month of June, when the arboretum is in its pride and glory. Owing to the unusually dry season, the show has this year fallen below the mark; but a visit, even under these circumstances, is greatly to be desired. West Dean lies almost midway between Chichester and Midhurst, on the direct road leading from Selby Bill to Hazlemere and the North. As the house and church have many interesting associations, the visitor whose tastes run in the direction of archaeology and local history, as well as natural scenery, botany, and floriculture, will find much to please him here. The situation is delightful, nestling as it does in a charming valley or dene (whence the name of the village), with splendid forest trees, and a rich profusion of wild plants on every hand.

West Dean House was erected just a century ago by the second Lord Selsey. It is quite hidden from view as one drives along the road, and only the back or sides can be seen when it is approached from the church. The front faces the east, and looks

away across a magnificent domain, whose charms are such that the King has found delight in a visit here; and the Duke of York, in 1890, had some excellent shooting on the estate. Behind the house the trees form a charming background, as they cover the rising ground to the west, and produce a most pleasing effect by contrasting strikingly with the white masonry of the mansion.

Supposing the visitor to approach the village from Chichester, he will first drop down the quiet lane which runs off at right angles from the high road, and at a distance of 100 yards he will find the church, with the house adjoining. That there has been a sanctuary here for many centuries is certain from the fact that a doorway on the north side of the nave is of the Saxon style of architecture, and probably dates from the middle of the 11th century. The main part of the church is in the Early English style, but it has been frequently restored, especially during those ages when architecture was little understood; hence it is wanting in that beauty which no other village church can boast. None the less, it has much of interest for the antiquary. The tower is curious, and still has its spire on the south face, but at such a height that the date cannot be made out without the aid of field-glasses. The main feature within the church is the monument on the north side of the chancel, with effigies of three of the Lewknors. It was doubtless in this neighbourhood that the royal villa of Dene was situated, at which King Alfred was wont to reside. In 1525 William Alwyn directs his body to be buried in the chancel of St. Andrew, of West Dean, and gives to the silver cross of West Dean *xxd.*, and to every light being in the church half a quarter of Barley.

Some memorable names have been in times past associated with the manor. The Rev. L. Vernon Harcourt for some time resided here. Lord Selsey, who built the house, was a member of the Peachey family; the Peacheyes and Lewknors figuring largely in the history of the district in the days of yore. One Christopher Lewknor, M.P., was Recorder of Chichester during the Civil Wars, and had to suffer a good deal for the part he played therein; having been voted guilty of treason to the Commonwealth, his lands were ordered to be sold in 1651. Three quarters of a century earlier, Thomas Lewknor of Selsey was suspected of popery. It was for his charge against Lewknor and others that Curtis, Bishop of Chichester, had to defend himself in 1577.

To visit the arboretum, one passes through the beautiful gates of ornamental iron-work which abut on the main road, and just before reaching the house takes a footpath across the fields facing east. Here, after passing a little stream, the mansion comes into full view. The naturalist finds himself in the midst of a choice variety of plants, insects, and birds. The Downs run through here, and yield the Rock Rose, several Orchids, the wild Mignonette, salad Burnet, stemless Thistle, Canterbury Bells, with numberless flowers, shrubs and trees, which the botanist delights to see. The Burnet Moth and Humming-bird Moth abound, and every tree is alive with feathered folk. The preserves are extensive, and so well stocked, that during the shooting season, waggons-loads of game are brought into Chichester as the result of a day's sport.

The present feature, however, is the ar-

boratum; while it is chiefly attractive on account of its choice and varied assortment of Rhododendrons, it does not lack other trees and shrubs. The Pines seem rather to encourage than hinder the growth of flowering shrubs, and the following is a list of some of the trees and plants which may be observed: the Rhododendrons, Lilac, Syringa, Laburnum, Hawthorn of various colours, single and double; Horse-chestnut and Gueldres Rose blossom together. The Oak, Ash, Birch, Copper Beech, Sycamore, a choice variety of Conifers, including the Sciadopitys, Yew, Crab, Box, flowering Currant, and Holly with last year's fruit giving colour to the sombre foliage, are carefully blended, and produce a rich effect. The green sward is beautifully kept, and the whole effect on a warm day in June is most pleasing and refreshing. The people of Chichester greatly appreciate the privilege of visiting these lovely grounds. *A Sussex Naturalist.*

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM CRISPUM "MARGERY."

A VERY remarkable novelty in spotted Odontoglossums, and which, if not equal to the best in size and marking, it is more remarkable than most of them in the peculiar form of its flowers, which is as peculiar as the distinguishing features of *O. c.* Oakfield Sunrise, illustrated in the *Gardeners' Chronicle*, March 21, 1900, p. 181.

The sepals are broad, and in form more like the petals of the species usually are, being crimped and slightly fringed, white, slightly tinged with rose, and bearing distinct reddish-purple blotches; the lateral ones having also red-purple bands at their bases. The petals in form are a wide departure from the type; at the base they are slightly stalked, and expanding into a broadly ovate blade, which at the margin is incurved, the slightly apiculate tips forming a cavity. The colour is pure white, with an irregular row of reddish-purple spots near the margin, which is bright purple. The lip is very short, the margin and apex being slightly turned in; disc and crest yellow, margin marked with purple lines as though made with a pen, and forming an irregular band. The short space between the front of the crest and the apex is occupied by a brown blotch. The singular variety has again flowered with Richard Ashworth, Esq., Ashlands, Newchurch, Manchester (gr., Mr. E. C. Pidsley, who sends a flower of it, together with the information that he obtained the plant some time ago from Messrs. Backhouse, of York, *J. O'B.*

GARDENS IN THE CAUCASUS.

(Continued from p. 100, vol. 757E.)

As I have already mentioned, good gardens in Chalchis are very few, and of those I visited I will mention the principal ones, where I found Palms and other trees and shrubs planted out in the open ground growing to such perfection of robustness and height as I would not have believed, unless I had seen it myself. One of those few "naturalisers," who has done anything in the horticultural line in the Caucasus is Mr. Tartarionoff, of Sushum, a man greatly interested in his work, and who at the same time knows a good deal about plants, botanically as well as geographically. Mr. Tartarionoff's garden, with its many different kinds of Palms, of which several reach the height of from twenty to thirty feet, reminds me more of subtropical America than Asia.

Among the Palms I noticed among others:—*Sabal Blackburniana*, *Trithrinax Mauritiifolia*, *Raphis flabelliformis*, *Juleca spectabilis*, *Cocos australis*, *Washingtonia robusta*, *Cocos Gaertneri*, *Cocos Yatay*, *Brahea edulis*, and *Latania borbonica*, not to mention *Chamaerops humilis*, and *Chamaerops excelsa*. Of the other trees I will mention, *Acacia melanoxylon*, *Magnolia fuscata*, *Magnolia grandiflora*, *Parrotia persica*, *Brachyhiton acerifolium*, *Rhus semialata*, *Eucalyptus coccifera*, *E. Globulus*, *E. viminalis*, *E. melliodora*, *E.*

Pittosporum Tobira, *Viburnum odoratissimum*, *Liquidambar styraciflua*, *Cycas revoluta*, *Lonicera brachypoda*, *Prunus lusitanica*, and many others.

Although Tartarinoff's garden is yet young, and although it is very difficult here to interest people in horticulture, yet it has become a real centre for the dispersion of subtropical plants in this part of the country. His twelve species of Bamboo, his *Eriobotrya*, and other plants, are now appreciated in other gardens also.

den as those two above-mentioned, and more good gardeners; or better still, were it less far from England, then I am sure that the shore of the Black Sea would quickly have been covered with villas surrounded with gardens of fine Palms and winter-flowering shrubs, and not any Nice in the world could in any way have compared with the luxurious and robust vegetation of the subtropical district of Russia. But alas! lovers of gardens and of horticulture are here very scarce, and I can only cite one more garden—that of Mr.

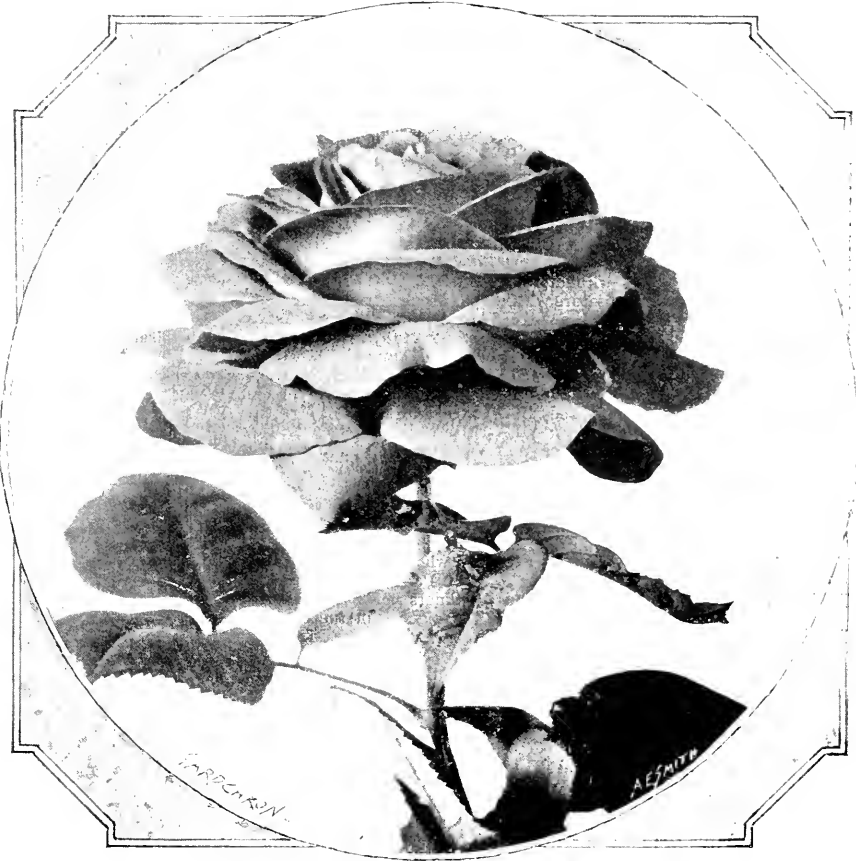


FIG. 1.—ROSE ALFRED K. WILLIAMS (H.P.): CRIMSON.

polyanthemos, *Photinia serrulata*, *Ilex macrophylla*, *Mahonia Fortunei*, *Asimina triloba*, *Osmanthus*, *Callitris quadrivalvis*, *Quercus glabra*, *Chamaecyparis obtusa*, *Pinus palustris*, *P. macrocarpa*, *Phyllirea*, *Daphniphyllum*, *Thuja gigantea*, *Xanthorrhoea*, *Eurya japonica*, *Coccoloba laurifolia*, *Elaeagnus pungens*, *Cinnamomum pendunculatum*, *Illicium anisatum* and *I. religiosum*, *Psidium Cattleianum*, *Citrus Bigaradia*, *Acacia dealbata* and *A. Farnesiana*, *Daphne japonica* and *indica*, *Choysia ternata*, *Jasminum officinale* and *J. grandiflorum*, *Magnolia grandiflora*, *M. fuscata*, *M. pumila*, *M. Lennei*, *Olea fragrans ilicifolia*,

Near the monastery Neu-Athas, there is a really wonderful garden, especially celebrated for its Cypresses, Phoenix *dactylifera*, evergreen hedges of gigantic *Neriums*, *Eriobotrya*, and lovely plantations of Oranges and Citrons.

To see the subtropical trees develop to their highest perfection and tullest beauty, the garden of Mr. Wodensky must be visited. Gigantic evergreen Oaks, *Thuja gigantea*, *Chamaerops*, and *Wellingtonia*, besides the above-mentioned trees, will prove that there is reason for the question about naturalising subtropical trees and plants here.

If Calchis had had more such lovers of gar-

Stajanow, not far from Chakva, the first station from Batum. Here may be plainly seen how the great humidity of the climate favours the development of fine trees and Conifere, which have grown to such dimensions that nothing like it can be found anywhere else in Europe.

Chamaecyparis pisifera, *Gardenia florida*, *Acacia dealbata*, *Cedrus Deodara*, *Pittosporum Tobira*, *Melia Azedarach*, *Kolreuteria paniculata*, *Pinus Pinea*, *longifolia*, *canariensis*, *Cunninghami*, and *lanceolata*; *Aucubia japonica*, *Cryptomeria elegans*, *Draecena indivisa*, *Lagerstromia indica*, and *Phonmium tenax*, would

not be better in their native countries. The Camellias along the walks in the garden are a very interesting and pleasing sight when the large bushes, some of which reach to the

garden where they can be planted out in the open ground and grow into large ornamental trees, covered with hundreds and thousands of blooms, is ideal. Worthy of notice also are

Germany but as small plants grow here to the highest perfection, and form very large specimens. The pyramidal Taxus are true giants, like church-steeple. The climate of



FIG. 2.—NEW ROSE, "CONRAD FERDINAND MEYER"; FROM A CROSS BETWEEN R. RUGOSA AND A H.P. COLOUR LIGHT ROSE.
(See p. 351, June 8 last, and p. 19 in present issue.)

height of from 15 to 20 feet, are covered with their lovely blooms. Camellias were always universal favourites, and those little trees which are cultivated in pots or tubs are a delight to all who see them; but to have a

Mr. Stajanow's Cryptomerias; Cryptomeria elegans here reaches in ten or twelve years between 20 and 30 feet in height.

Generally speaking, Conifers grow wonderfully well. Sorts never seen in England or

Batum suits the Eucalyptus. In England this is a greenhouse plant, planted out in summer. In Mr. Stajanow's garden I saw groves of Eucalyptus, some plants only five years old, and from 60 to 70 feet high. A. K. Anderson.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CATTLEYA - JUPITER.

A FLOWER of a very showy form of this pretty hybrid between *Cattleya Warscewiczii* and *C. Lawrenceana* is sent us by Messrs. Charlesworth & Co., Heaton, Bradford, who have a few seedlings of the plants, raised at their nursery, flowering for the first time. The original form, much lighter in colour than the present one, was raised and exhibited at the Royal Horticultural Society, October 13, 1896, by Mr. T. W. Bond, gr. to C. L. N. Ingram, Esq., Godalming. The present variety has flowers as large as those of a *Cattleya labiata*, but the lip, though larger and broader, is displayed as in *C. Lawrenceana*. The sepals and petals are of a silvery white, tinged with purplish-rose, and similar colouring appears on the side lobes of the lip. The disc of the lip is arranged as in *C. Warscewiczii*, the yellowish patches being arranged on each side. Front and broad margins of the side-lobes of the lip bright purple.

LAELIA PURPURATA KROMERI.

A noteworthy albino taken from an importation of *Laelia purpurata* received by Mr. E. Kromer, Roraima Nursery, London Hill, Croydon, was recently in flower as a strong plant in Mr. R. L. Measures' garden, Cambridge Lodge, Camberwell. The flower is pure white, with the exception of the inevitable fine dark lines radiating to the centre of the lip, always found in forms of *Laelia purpurata*; these dark lines change to a very slight pencilling of pale rose colour towards the front lobe of the lip, and a slight yellow tinge is noted at the base of the lip, but in no part of it is there evidence of colour sufficient to make it any other than a white flower.

THUNIA ALBA.

Flowers of this graceful and variable Orchid are sent by Mr. John Cole, gr. to X. Small Page, Esq., Craigmoor, Little Orme's Head, Llandudno, who states that a number of plants from an importation made by Messrs. F. Sander & Co. are now in great beauty there. The flowers are in every instance of the same form, and borne on drooping heads from the tips of robust, Bamboo-like growths. The sepals and petals of all are pure white, but the lip differs in colour and marking, some having the fringed lamellae on the disc of a yellow colour, others having light rose stripes, and the form which is known as *Bryneriana* having a very bright purplish-rose reticulation over the whole of the front of the lip, and markings of the same tint on the lamellae, the base of the lip being tinged with yellow. *Thunias* are very easy to grow and flower in an ordinary plant-stove; but after the leaves turn yellow, and indicate that the resting season has come, they should be placed in a cool greenhouse or vinery, and kept dry until growing time.

CABBAGES BOLTING.

I MET Mr. Pope of King's Norton recently, and in conversation he asked me if I had seen the correspondence in the *Gardeners' Chronicle* on the bolting of Cabbages, including his letter. I told him that I had not, for I had not read my *Chronicle* for two or three weeks. Now, on my return home, I have just read the first letter by "A. D." on the Reading trials of Cabbages, and also Mr. Pope's reply, in which my name is mentioned. They are both written by very practical growers, and I quite agree with the substance of "A. D.'s" remarks, that some varieties always bolt, such

as Early York, Large York, and all varieties with York blood in them, such as Leeds Market, &c., and Express.

Of course, I am now referring only to autumn sowing (middle of July to August 8), for the very varieties I have mentioned as sure runners when autumn-sown are perhaps the best, or at any rate the quickest to form Cabbages, when sown in the spring; and some few other varieties, such as Ellam's Early, Little Pixie, &c., are almost sure to have a percentage, small or large, of bolters, while others (if good, select stocks) are scarcely likely to have any, or but very few. However this, I am sure, depends considerably upon seasons. I have known, as everyone with much experience in Cabbage-growing must have proved very often, that the same seed sown two years running may not show a runner the one year, and the other year 5, or even 10, per cent. may run.

Old Mr. Kemp's secret of keeping his Cabbage-seed for four to six years under his bed before sowing, recorded by Mr. Pope, is interesting, and I should be sorry to endeavour to spoil Mr. Pope's pretty story. But certainly, it would never do for a seedsman to sell four to six year old seed, as it would be sure to get him called to account for selling weak-growing seed. Nor does my experience help me to think it necessary, as unquestionably new Cabbage seed can be had which does not bolt.

It must now be close on twenty years since I first supplied Mr. Pope with our Early Market Cabbage, and which he has always spoken of very highly, and has never yet complained to me of its bolting; nor do I find any of the usual sorts of market-garden Cabbages bolt if but one or two years old, and older than this it is seldom sold, although I admit that given a really good harvest, when the seed has been well ripened in the sun, and thrashed out and sacked in the sun, Cabbage seed, like all oil seeds, will keep good for four or five years. But, and it is a big but, if not well harvested and thrashed, and it is sacked in damp or foggy weather, new seed will not grow nearly so well as that of a previous year's good harvest, be it three or four or five years old. Good seed years are generally good vintage years, and *vice versa*. I think it was in 1891, a very bad harvest year, when the germination of few new seeds was greater than 50 to 60 per cent.; but some Brussels Sprouts seeds I had in stock of 1886 harvest (a good vintage year) then (in 1891) grew 85 per cent. The one remark of Mr. Pope's I take particular exception to, and I feel sure he has not conveyed his true meaning to, is that in which he states, speaking of my "Early Market,"

"I rogued the entire bed, leaving about nine plants for seed." This might be read to mean that all the bed were rogues except the nine, but I feel certain the meaning is this, that they were all good Cabbages, but nine of them took his fancy as being something extra special, and worth fixing for stock. This is what, I presume, most growers do. When I select Cabbages for stock seed, I put sticks to those which I consider the *crème de la crème*, only the rest are cut for market, and these with sticks are grown on for stock seed.

It is a pity that cheap Cabbage seed should be a necessity in the trade.

All Cabbage for seed should be sown in July, and what is called stump-seed, only produced, but this takes twenty-five to twenty-six months to produce, from July to the following August or September two years, and every stump being transplanted after the Cabbages have been cut, at of course considerable extra expense; whereas, Cabbage seed can be got

(and must be got for cheap seed) by sowing in April or May (not transplanted), and seeded at the same time as the stump-seed—seed sown eight or nine months previously, viz., in the following August or September twelve-month, and possibly not having formed a perfect Cabbage—only therefore taking sixteen to seventeen months to produce. Naturally the seed in the one instance can be produced much cheaper than in the other, and the stump-seed must be the better because perfect Cabbages have been produced on the stumps, and all runners, if there were any, were destroyed the first year. The ordinary seed produced from March or April sowings cause no tendency in the plants to run in the cool autumn; and when the following spring comes they run of course for the seed crop. *Affred Watkins, Tavistock Street, London.*

FORESTRY.

SPONTANEOUS GROUPS OF SEEDLINGS.

(Continued from p. 100, vol. LXXI.)

Those who live among the Beech-woods of Bucks, or the heathy commons and wastes of Surrey and Hampshire, are familiar with the case with which the Beech reproduces itself in the former, and the Scots Fir in the latter. There is this difference between the two instances, however, that while in the former this reproduction means the regeneration or renewal of the wood, in the latter case the species only reproduces itself on bare ground or heath, and not in the woods in which it was first introduced, until these approximate to the condition in which they formerly existed. These two instances demonstrate the importance of suitable conditions before natural regeneration can be successful, and that these conditions vary with different species. We might sow artificially Beech-seed on the heath or Scots Fir-seed in the wood, but the results would be equally disappointing on a large scale. On the other hand, Birch, Chestnut, Oak, and many other species, reproduce themselves as freely in moderate shade as in the open, although they cannot stand such a prolonged spell of shade as Beech or Silver Fir. These peculiarities of different species have to be studied wherever natural regeneration is attempted at all; but where attempted in the presence of rabbits, something more is necessary.

In the first place, germination of the seed on the best possible seed-bed is of little use unless some other growth is present to protect and hide the seedlings from the rabbits. On bare ground every seedling is eaten off the first winter, unless they come up in such numbers as to literally cover the ground, as we sometimes see Sycamore and Beech. The present season is an almost unprecedented one for Beech seedlings in the south of England, the soil being literally carpeted with them wherever a Beech tree stands. On a square yard of ground we counted no fewer than 1,000 healthy seedlings, and in patches such as these, there is every prospect of a proportion reaching rabbit-proof size. In such instances it would seem that their very number is a protection in itself, for the rabbit is rather an epicure than a gourmand, and prefers a choice variety to a surfeit of one particular food. Ash, again, sometimes comes up in thick patches, and escapes general destruction from the same cause; but the chief reason why these dense clumps of seedlings survive when thinly scattered plants perish is because they offer in their thickly arranged stems an obstacle to the rabbit's progress through them. This animal likes a beaten track, and rarely

pushes its way through thick growth without a definite object. Unless compelled by hunger therefore, stems which stand only an inch or two apart are avoided by them, or only partially barked, if barked at all. But away from these thick patches, which in the ordinary course of things cannot extend over a large area, the only chance of the seedling escaping lies in the protective covering of herbage. This must be something which effectually covers the seedling, and is at the same time not dense enough to smother it. Brambles are of little use, for they become hollow below, and rabbits can move about freely below their stems. Most herbaceous

protection on account of its thorny growths and low habit, but does not come up to the grass, and both kinds are only found on fairly good soil. A. C. Forbes.

(To be continued.)

GLASGOW AND SIR WILLIAM HOOKER.

The new botanical department of the University was opened by Sir Joseph Hooker recently in the presence of a distinguished company. Sir Joseph Hooker presided the ceremony with a description of the work done by his father both before and after he became

as in all other Universities in the Kingdom, the botanical chair was, and had always been, held by a graduate in medicine. Owing to these disqualifications his appointment was naturally unfavourably viewed by the medical faculty of the University. But he had resources that enabled him to overcome all obstacles—familiarity with his subject, devotion to its study, energy, eloquence, a commanding presence, with urbanity of manners, and above all, the art of making the student love the science he taught. Continuing, Sir Joseph Hooker said:—

I was asked what I regarded as of most importance to the student in the manner of my father's teaching. I would answer that it taught the art of exact observation and reasoning therefrom, a schooling of inestimable value for the medical man, and one that is given in no other profession, but which ought to come in this country, as it does in Germany, early in the education of every child. There were many of my father's pupils abroad, in India and the Colonies, who have told me that these botanical lectures gave them the first ideas they had ever entertained of there being a natural classification of the members of the vegetable kingdom. Then with regard to the results in a botanical point of view, the magnetism of the lecturer and the interest of the subject rubbed many of his pupils with a love of science that proved permanent and fruitful. They made observations and collections in tropical climates of both hemispheres, some of them throughout their lives, which have very largely contributed to a knowledge of the flora and vegetable resources of the globe. After twenty years of professorship my father retired, and undertook the directorship of the Royal Gardens, Kew. Since that method of botanical teaching in all our Universities, on the one hand, to a vastly advanced comprehension of the structure of plants and of the functions of their organs, and on the other, to a recognition of the fact that the study of the animal and vegetable kingdoms cannot be considered apart. Furthermore, chemistry, physics and greatly improved microscopes are now necessary for the elucidation of the elementary problems of plant life. The instruction in these two sciences—chemistry and physics has with all others a keener in this University *pari passu* with that of botany, and I kept it in the forefront of the educational establishments of the kingdom. The addition of the building in which we are assembled is evidence of the resolve that it shall not relax its efforts to maintain its high earned position, and with the exception that the botanical laboratories will prove an invaluable aid to research under the eyes of its distinguished director, I now, under his authority, declare it open. *Nature*.

In this notice but slight mention is made of the recent living plants introduced into the Glasgow Botanic Garden and described by Sir William Hooker. There are, we hear, many university gardens where new plants from foreign climes are never introduced.

FRUIT SALES.

WE extract from a recent number of the *Kentish Gazette* the following particulars relating to the sale of fruit on the trees, which may be of interest to some of our readers:—

"Several of the leading firms of auctioneers conducted their annual sales of soft fruit, and on the whole fair prices were realised. Messrs. R. Wainman & Sons, at their 42nd annual sale at Maidstone, the second sale of cherries and other soft fruit for a total of £290, which, considering the drought and the market prices, was very satisfactory. The previous day Mr. W. R. Tompsett, of Tonbridge and Paddock Wood, succeeded in selling a good quantity at Paddock Wood. Buyers were somewhat backward in bidding for cherries, but black currants sold well. At Messrs. Jackson's sale of cherries in the Sittingbourne district there was a better trade than was the case at Newington. Only a few lots were passed. The cherries, at stable Orchard, Milton owned by Mr. J. Hulde, made £115; Mr. J. Stager had an orchard at Borden which made £120. Mr. R. Chapman's cherries at Chilton, Sittingbourne, made £191, and Mr. M. Chapman's at the 'Red Bull' orchard, made £158. The district there was a better trade than was the case at Newington. Only a few lots were passed. The cherries, at Bapchild, made over £100 each lot. Messrs. Northedge & Honeyball held their annual sale of cherries in the Lysted district on Wednesday, at the 'Black Lion' inn, Lysted. The cherries on the well-known Noods Estate made £200 10s., which is a record price for the Kentish district. At Messrs. W. Finck & Sons held their annual sale at the 'George' inn, Boughton-under-Blean, when some of the finest orchards in East Kent were offered. Trade was good, and it will be seen from the following figures that good prices were realised. Cherries in Large Orchard, opposite Natch Court House, Boughton, £174,

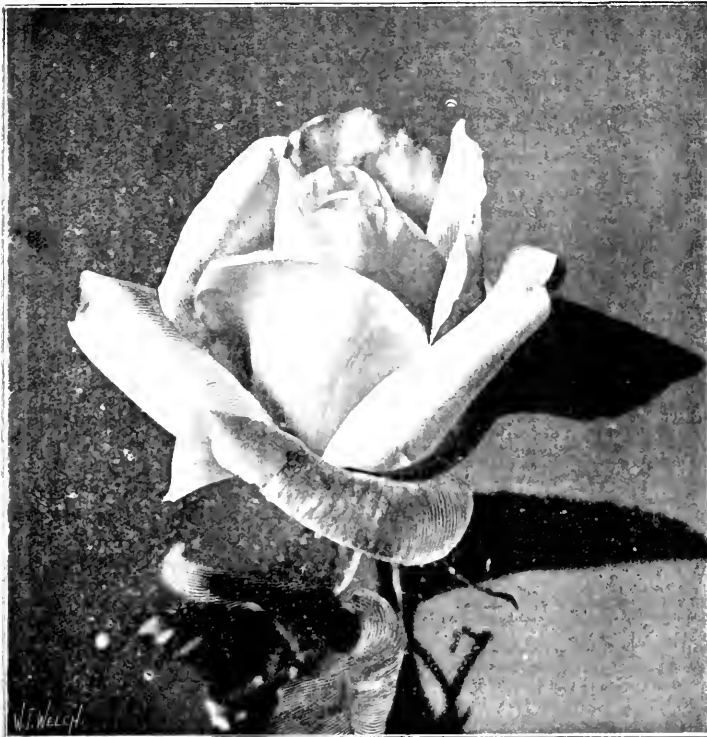


FIG. 3.—INNOCENCE PEROLA (L.).

Nearly pure white, occasionally tinted with pink—a very popular exhibition Rose.

growth dies down in the winter when it is most needed, and many kinds of grass do the same. The best protective growth, according to our experience, is formed by the Tussock grass (*Aira caespitosa*), and the smaller varieties of the Dog Rose, Oak and Ash being frequently found in patches of these growths, which have grown up uninjured. The Tussock grass is especially useful for this purpose, on account of its stout growth and erect position through the winter. Old-established tufts of it prevent the seed getting down, and have too strong a hold upon the ground to give anything else a chance; but when only a year or two old, or thinned by taking out the old tufts, it forms a good matrix for strong seedlings such as these. The Dog Rose acts as a

Professor of Botany in the University in the first quarter of the last century. He had not been educated for the medical, or indeed any other learned profession. Having inherited ample means, and having been from childhood devoted to the study and collection of objects of natural history, he determined to devote his life and his fortune to travel and scientific pursuits. Early in 1820, reduced circumstances requiring him to turn his botanical attainments to material account, he obtained, through the influence of his friend Sir Joseph Banks with George III., the chair of Regius Professor of Botany in the Glasgow University. It was a bold venture for him to undertake so responsible an office, for he had never lectured, or even attended a course of lectures; and in Glasgow,

last two years, £98 and £155. Cherries in Small Orchard, £150; last two years, £56 and £130. Cherries in orchard at back of Bondon Street, £65; last two years, £65 and £50. Cherries in orchard at back of Parsonage Farm (late Duncann), £31; last year, £56. Cherries, Plums, and Apples, in Old Orchard, Ten-acre Field, Boughton; and Cherries in Ten-acre Field, £40; last two years, £27 and £28 10s. Cherries growing in Norham Orchard, Selling Court Farm, £24 10s.; last two years, £169 and £140. Middle Orchard, ditto, £25; last two years, £80. Lower Orchard, ditto, £29; last two years, £31 and £33. Cherries at Gosmere Farm, Selling, £178; last two years, £122 and £140. Cherries growing in Farndun Orchard, Stippington Farm, Canterbury, £109; last year, £90. Cherries in Hog Orchard ditto, £10; last year, £31. Cherries in Six-acre Orchard, ditto, £73; last year, £75. Cherries in Poplar Orchard, ditto, £90; last year, £11. Cherries in Cow Pasture Orchard, ditto, £108; last year, £129. Cherries in Wood Orchard, ditto, £121; last year, £80. Cherries in Twenty-acre Orchard, ditto, £122; last year, £116. Cherries in New Pasture Orchard, ditto, £41; last year, £31. Cherries growing in Merton and Eight-acre Orchards, Canterbury, £60; last year, £60. The Cherries growing at Chim Farm, Harbledown, £71; last two years, £66 and £53. Cherries in three orchards, Sole Street House, Selling, £81; last two years, £68 and £84. Cherries in Lees Court Orchard, Sheldwich, £82; last year, £56. Cherries, Apples, and Pears in Large Orchard, Staple Street, £255; last two years, £256 and £180. Cherries, Damsons, Apples, Pears, and Walnuts, Old Orchard, ditto, £71; last two years, £37 and £65. Cherries, Pears, &c., in Church Orchard, Hembill, £73; last two years, £47 and £60. Cherries, Apples, Pears, Plums, and Damsons in Oast Orchard, Mount Farm, £16; last two years, £10 and £13. Six acres Cherries, Upper Ensing, Clitham, £41; last year, £43. Cherries in Preston Orchard, Faversham, £59; last two years, £86 and £13. Cherries in Poplar Hall Orchard, Goodnestone, about 6/2 acres, £121; last two years, £130 and £110. Cherries in Denory Orchards, Chatham, £22 10s.; last two years, £22 and £20. Cherries and Walnuts, Wellbrook Orchards, Boughton, £19; last two years, £33 and £39. Cherries, South Street Orchard, Boughton, £12; last two years, £47 and £30. Cherries in three orchards at North Street, Sheldwich, £125; last two years, £100 and £120. About 3 acres Black Currants, next Farm House, Scissaler Cross Farm, Whitstable, £28; last two years, £22 and £25. Ditto, on another 3 acres, £28; last two years, £19 and £24.

In East Kent the absence of adequate rains has caused a large falling off in the promise of a plentiful Strawberry crop. The show of Apples and Plums varies a good deal in different districts, and Damsons will be short. There are plenty of Cherries, Gooseberries, and Red Currants; but Pears only promise half an average and Black Currants will be scarce.

PLANT NOTES.

VERONICA TEUCRIUM.

The brightest flower in Edge Hall garden in the last week of June was perhaps *V. Teucrium* (Linnaeus). What may be taken as the type is a plant of stiff shrubby growth, and many divergent stems and branches, covered with bright blue flowers borne on small axillary spikes, each stem having a terminal tuft of leaves. The height of this type is about 12 inches. But *V. Teucrium* is a very wide species, as anyone may see who now visits the Veronica-beds in the hardy herbaceous garden at Kew. There is a dwarf prostrate Veronica, generally known as *V. prostrata* (Linnaeus), and in nurseries by the unauthorised name of *V. rupestris*; this is now called at Kew *V. Teucrium* var. *dubia* (Chaix). Between this small prostrate form, and a form with robust stems nearly 2 feet high, and broad leaves, called *V. latifolia* (Linnaeus), there is every gradation in size, and the leaves vary from narrow lanceolate in var. *dubia*, to broad ovate in *V. latifolia*. Seed ripens far too abundantly, and causes some trouble in weeding; but the brightness of the blue in the flowers varies a good deal, and it is a good plan to sow some in a spare dry corner, and select the best colours. The colours seem always better in dry soil, especially on limestone or chalk. It is a great merit that no variety of this plant ever requires watering, or artificial support. I have never seen more than one form with white flowers—this belongs to var. *dubia*,

and was found by me fifteen years ago at Gavarnie; but though I have done my best to raise a stock from it, it continues scarce and "miffy." C. Wolley Dod, Edge Hall, June 27.

ASTER VILMORINI.

A fine dwarf Aster, from 11,000 feet altitude in Western China. It differs from *Aster alpinus* in the much bluer colour of the ray florets.

BULEIUM CROCEUM.

A very showy plant from Asia Minor. The flowers and involucre are bright yellow, and produce an effect similar to that of an *Euphorbia*. I do not yet know whether it is hardy.

CERATOSTIGMA POLIHILLI.

A dwarf-creeping plant from a high altitude in Western China. I think this will be a very notable shrub. The flowers have the delicate lavender colour of *Plumbago capensis*. I did not dare to trust my solitary plant out-of-doors last winter, but as I have succeeded in striking cuttings this spring, I shall test it next winter. Coming, however, from 10,000 to 12,000 feet altitude, it is practically certain to be hardy.

CALCEOLARIA POLYRHIZA.

A dwarf, tufted plant from the Patagonian Andes. The flowers are yellow, inclining to orange. I have not yet tested its hardiness.

PENTSTEMON CERULEUS.

A hardy dwarf Pentstemon of great beauty. The foliage is glaucous. The flowers at opening have the tube suffused with an objectionable mauve colour. Soon, however, this passes, and the whole flower-spike becomes of the exquisite colour of *Delphinium Belladonna*. My plants passed through last winter unprotected. Seed can be procured from Mr. D. M. Andrews, Boulder, Colorado, U.S.

RODGERSIA PINNATA.

This fine plant is one of Dr. Henry's Yunnan finds. It differs from *R. podophylla* in the leaves, which are hairy when young, more or less pinnate, and in the inflorescence, which is of a beautiful rose colour.

ONOBRYCHIS VIOLEAFOLIA.

A dwarf, spreading alpine, with pinnate foliage, and innumerable spikes of brick-red flowers.

SALVIA PRZEWALSKII.

A rather showy plant, 3 feet high, with numerous spikes of large purple flowers.

ANCHUSA SP.

This plant came to me from Mr. Smith, of Newry, and seems to be quite one of the finest of herbaceous plants. It has not here exceeded 1½ ft. in height, and for a month it has been loaded with flower-spikes bearing flowers with a white eye, and with a limb of the very purest and deepest gentian blue. In the amazing mass of its splendid colour, I know of nothing to equal it. It is hardy, and is ripening seed in quantity.

LINARIA PELOPONNESIACA.

Hardy perennial, 4 feet high, bearing closely-packed spikes of very pale lemon-yellow flowers. A. K. Bulley, Neston, Cheshire.

BOTANICAL VEGETABLES.—While almost every kind of vegetable is enjoyed in Southern Italy, cut into slices and fried in oil or fat, *Lagenaria longissima* is preferred, the young cylindrical fruits being cut into slices of a uniform thickness, the easier to prepare them for table. The varieties *L. minima* and *L. depressa* make pretty climbers, and are extraordinarily fruitful, and have a good effect. The dried fruits are used to decorate the windows of shops, and when cut in half to form suitable boxes for the seedsman's writing-table. *Die Gartenwelt*.

NURSERY NOTES.

PEAS AT SLEAFORD.

IN the midst of a fertile county, that produces an immense amount of seed for field and garden crops, is the quiet little town of Sleaford, where Messrs. Chas. Sharpe & Co., Ltd., have their headquarters. To this interesting place we were invited on June 28 to inspect a representative trial of culinary Peas.

The trials have been made on three acres of ground that only two years ago was under grass, and is situate just at the back of the residence of Mrs. Sharpe, widow of the late Chas. Sharpe, who died about four years ago. There are 897 rows and 150 varieties of Peas, some exceedingly dwarf in growth, others as tall as Duke of Albany and Telegraph. There are wrinkled and round, blue and white seeds, and very considerable variation between varieties in respect to the date at which they commence to yield a crop.

But they had all the same appearance from one point of view; they were equally well cultivated, and notwithstanding the little rain that has fallen during June, they were in first-rate condition. The soil is sandy, about 2½ feet deep, and though it is of a kind that may be most easily worked, and in any weather, it possesses a fair amount of moisture. The first and second early varieties were sown on March 14. One of the very earliest to yield is Best-of-All (McLenn), of the type of the old Saugster, but a fortnight earlier than that variety. The haulm is 3 feet high, and the seeds white and round. Next was Earliest-of-All, very early, but having blue seeds, also round; it is of the type of Kentish Invieta, and grows about 3 feet high. William the First grows a little taller, but is not so good.

One of the first of the wrinkled Peas to yield was May Queen, a very good variety with greyish pods, channelled on both sides. The first of all the wrinkled varieties was Oxonian, which appears to be a selection from Alpha or Dr. Hogg; it is a good variety, but has small pods. Very little later is Gradus (Laxton), and this has larger pods, which are much curled, and very handsome; it grows 3 feet 6 in. high, and yields as early as May Queen, which has white Peas, whereas those of Gradus are green. Ameer may be regarded as a direct successor to Ediphe, but it has bigger pods, which are more curled; the Peas are round and blue, and the haulm about 4 feet high. Bountiful is a light-coloured form of Ameer, crops more heavily, and may be kept true more easily. Duke of York is rather later than Gradus, grows about 4 feet high, and is a first-class Pea. Of the semi-dwarf wrinkled varieties with large pods, Gradus was fit to gather first, then came Duke of York, and afterwards Prince of Wales. Prince of Wales has a haulm of 3½ feet.

We next looked at some rows of Serpette, a French variety, something after the style of the old Avengeur, and Scimitar, so named because the pods resemble in shape the curved sabre of that name used by the Persians and other Mohammedan peoples. Messrs. Sharpe & Co., who do a considerable business in France, declare that the French like an attractive pod; but the variety is of no use in England, and was by no means ready to gather when these notes were taken. A much better variety than that noted above has been sent to Messrs. Sharpe under the name of King of the Serpettes, but this much resembles the variety Gladiator, being at present indistinguishable from it. There is also a variety of this French type which has blue Peas, and is known as Serpette Bleu.

Next to these French Peas was the variety *Invincible*, raised by Mr. Culverwell, late of Thorpe Perrow gardens, and distributed by Messrs. Sharpe & Co. twenty-three years ago; and Dickson's *Favourite*, known also by several other names, the earliest Pea grown by the Essex market gardeners for the London market. *Fillbasket* was said to be a better Pea than either *Invincible* or *Gladiator*, but for some reason or other is not grown so extensively. *Supreme* is a first-class round white Pea, originally introduced by Messrs.

Sharpe declare that they obtained a parcel of seeds of this variety from America, from which there was only one true plant raised, all the others being rogues, and from that one plant the firm's stock has been raised. *Sharpe's Queen* is a large-podded, blue, wrinkled Pea, with a haulm of about 2½ feet high. It is exceedingly prolific, and one of the best of late Peas. *Late Queen* (Sutton) was also bearing a heavy crop of pods, but they were not filled. This variety appears to be of the *Omega* type.

but the pods were not filled. It is a wrinkled Marrow Pea; and *Stanley* is of the same type, but commences to yield a little earlier. Next we saw *Charles I.*, a good wrinkled marrowfat Pea 3½ feet high; and *Blue Peter*, a round-seeded variety, useful for frame culture, not yet fit to gather. Beyond these were rows of a number of varieties of Peas introduced last season by various firms, such as *King of the Earlies* (Carter), *Daylight* (Carter), *Diamond* (Carter), *The Herald* (Barr), a dwarf Marrowfat 12 inches high; *Little Marvel* (Sutton), an excellent variety; *Green Gem* (Sutton), *Nonsuch* (Sutton), *Nonparcél* (Sutton), *Ideal*, suggestive of *Sharpe's Old Paragon*; *Aene* (Veitch), an improvement upon *Exonian*; *Thos. Laxton*, with square-ended pods, in some respects much like to *Gradus*; *Incomparable* (Hurst), and others.

The varieties we shall mention now were sown on April 15, or rather more than a month after those already mentioned, and consequently few of them were full podded, whilst others were just in profuse bloom. We remarked the popular *Daisy* (Carter), briefly described as a valuable green form of *Stratagem*, *Telegraph*, *Telephone*, *Duke of Albany*, and *Monarch*, the variety last-named being an improvement upon *Duke of Albany*, and a heavy cropper. Next was an excellent sample of *Standard*, a variety raised by Messrs. Sharpe. It was sent to Chiswick for trial last year, and in the autumn was awarded an Award of Merit by the Royal Horticultural Society. It is a late-yielding Pea of strong growth, about 1½ feet high, branching habit, and bears very long pods, usually produced in pairs. Of the Alderman type, and therefore of capital flavour, this variety is one of the best late-yielding Peas in existence. Other varieties included *No Plus Ultra*, and some of the same type; *British Queen*, *Veitch's Perfection*, an old semi-dwarf, wrinkled Pea of good flavour; *Nutting's Dwarf Marrow*, with five or more Peas in a pod; *Pioneer* (Webb), a good Pea of the *Gradus* type; and *Glory*, a blue Pea grown for use in winter.

Messrs. Sharpe have grown for them a very large quantity of blue Peas, and these are sold for use when green Peas are not obtainable; but there is evidence of what the restaurant-keepers can do with soda and sugar, in the fact that there is more demand for these dried Peas in June, when the earliest fresh Peas should be coming in, than at any other period of the year.

La Rapide, from France, is an unusually quick grower; some that were sown on April 19, were fit for gathering on June 29, but the pods are of very small size; *British Empire* is a most distinct looking late Pea with haulms and pods of sea-green colour, the shape of the pods being similar to those of *Telephone*.

In addition to all these trials, there were duplicate rows of most of the varieties, representing the actual selected stocks of each, which have been sent to different localities to be cultivated for seed, under contract for Messrs. Sharpe & Co. The plants in these rows were unusually even, it being exceedingly difficult to find rogues. In a field also, where there were larger quantities of each variety, the same uniformity was observable, and there was every evidence that the firm seeks to keep every variety true to name, and selection is continually practised with a view to fixing and developing their best characteristics.

The work of such wholesale firms as Messrs. Sharpe, who cultivate and sell Peas from so many raisers, would be materially lessened if



FIG. 4.—ROSE SOLEIL D'OR (PERSIAN YELLOW) — ANTOINE DUCHER.

Received an Award of Merit at the Temple Show to Messrs. W. Paul & Son, and shown also on Thursday last. (See p. 10.)

Laxton. It is a most difficult variety to keep true to type, and we have seldom seen so even and true a sample. *Triumph* (Sharpe) is a white wrinkled Pea, well known for the peculiar shape of the pods, which have what is termed a "finger mark" upon them. This malformation in the pods results in a smaller number of Peas being developed, and the yield is therefore less than that of the *Prince of Wales* already mentioned, and of the same type.

Fortyfold is a second early wrinkled Pea of excellent cropping qualities, an improvement probably on *Champion of England*. Messrs.

Of *Beck's Gem*, or *Tom Thumb*, the best selected strain appears to be one known as *Nain d'Amouney*. It is a white, round-seeded variety of very dwarf-growing habit, and one that may be recommended for cultivation in frames. *Witham Wonder* is a wrinkled Marrow Pea, scarcely 2 feet in height; it has pale green haulm and pods, the latter well filled. *W. Hurst* resembles the last variety, but is much deeper in tint, and therefore more appreciated by certain purchasers. *English Wonder* is of the same type as *Witham Wonder*, but has obtuse rather than pointed pods. *Excelsior* (Sutton) was 2 feet high, and well cropped,

raisers refrained from distributing a variety until it has been perfectly fixed.

A few rows of Pens that are the product of cross-fertilisation showed a surprising amount of variation in height and habit of growth, season of flowering, and other characteristics.

In a field where a number of varieties of Potatoes are grown, we noticed Dealhigh Castle, a first early kidney (A.M., Royal Hort. Soc.), and Early Porter (A.M., Royal Hort. Soc.), a second early kidney.

Messes. Chas. Sharpe & Co., Ltd., of whom Mr. Jessop is the principal shareholder, having married the only daughter of the late Chas. Sharpe, are mainly wholesale seedsmen; but they have also a retail trade, especially in Lincolnshire.

We are much indebted to Mr. Seymour, who superintends the Pea trials, for the trouble he took to make our visit to the "Pens" as interesting as possible.

CANADA.

CANADIAN ROSES.

ACCORDING to the recently issued supplementary Report on Canadian experimental farms, the Rose still enjoys a favoured place in the flower-testing garden—the most recent importations from the old homeland and the continent being regularly placed under trial with accompanying results. It would appear to be a work of love—favourable results lending beauty and charm to the home life. Amongst the Roses held in high esteem by the best amateur growers in Canada we find Mrs. R. G. Sharman Crawford (pink), Magna Charta, Ulrich Brunner, Mrs. John Laing, Gloire de Margottin, and Madame Gabrielle Luizet. On a bush of Margottin, in the possession of Mr. Alderman Black, of Ottawa, some 211 fully exposed blooms have been counted. La France, dwarf, is also a favourite. By the way, Mr. Black's method of protecting Roses in winter is worthy of notice—adopted, we believe, at the Central Experimental Farm, where R. P. Roses have in the past suffered greatly in winter. After the surface soil freezes, the roses are bent down to the ground and securely boxed in between 16-inch boards. Dry leaves are then packed loosely among and over the branches and stems, and a cover nailed closely to the sides. The plants are thus completely encased, and snow and rain, which cause more damage than frost, are excluded. The leaves and canes are removed on the first warm day of early spring, and the plants came out perfect in their very latest growth, and quite uninjured by the mould which has wrecked the hopes of so many Rose-growers. Writing on culture, an American writer says:—"It is an astonishing thing to see that year after year the chances of obtaining the most beautiful Rose-blooms are frittered away through unintelligent pruning of the plant, even in gardens of great reputation. There are thousands of Rose-bushes all over the country which, in spite of being found in spring to have made fine growth during the previous season, never produce good flowers; and the explanation is generally to be found in the fact that no reasonable plan is followed in pruning. The commonest mistake is the leaving of the older branching strong wood, which has already flowered. Dwarf Rose-bushes at the beginning of the year generally consist of several much-branched stems, which carried bloom in the previous summer, with several strong straight canes springing from the base of the plant. In the case of Hybrid Perpetuals, these older-branching stems should be cut completely out, leaving only the new shoots from the base, which themselves should be then considerably shortened.

The Week's Work.

THE HARDY FRUIT GARDEN.

By C. HERBES.

The Fig.—The shoots of out-door Fig-trees have already grown to some length, and will have been disbudded in some gardens, and Fig-trees generally should have early attention paid to this matter, as some reduction of the number of the shoots will now be very necessary. Those of which are short jointed should be retained, and the long and sappy ones removed. Each should be afforded as much space as will allow full development of the foliage without crowding, the leaves not overlapping each other, or the wood will be ill-ripened. Shoots bearing fruit should be shortened for the space of two or three nodes beyond the uppermost fruits.

Out-door Vines.—Regulate and stop all leading growths, and keep all laterals pinched to one leaf. Shoots bearing bunches should be stopped at two joints beyond the bunches. Make shoots secure to the wall or fence against which the Vines are placed, before their weight causes them to bend downwards. Where the main rods are unsightly, and the fruit-bearing spurs of great length, young strong shoots coming from the bases of the fruiting shoots should be laid in, in order eventually to replace them. A little extra attention in the early stages of out-door Vine-culture will aid considerably in the ripening of the fruit.

Summer Pruning.—This operation should not be commenced too early, still some amount of stopping and regulating of strong growths may be carried out forthwith. Plums may be the first manipulated, the operation in their case being carried out gradually, so that no check is given to growth. Where early disbudding was practised, the work of this kind will now be of a light nature. Shoots not required should be closely cut back, and fore-right shoots for the formation of spurs shortened to three or four joints; and long shoots should be temporarily tacked in, or otherwise secured to the wall. The Plum crop appears to be generally a fairly good one, and in some instances a thinning of the fruits will be necessary. Where the crop of fruit is not a heavy one, only the thick clusters of fruit should be slightly thinned. If rain is not general and abundant, water should be liberally afforded the borders, otherwise the fruit will be of a small size, or drop off. Trees carrying heavy crops will be benefited with an alternate application of liquid manure. An occasional washing of the foliage will keep the trees clean and free from insects, and if clear water fails to dislodge aphids, a weak quassia-water, or other insecticide should be used for this purpose.

General Work.—The land on which are Strawberry-plants for the supply of runners, should be afforded water freely. Newly made plantations of old forced Strawberry-plants will also need copious applications of water until re-established, and a mulch of short manure will also be of much assistance. Raspberry plantations should receive water copiously if the weather keeps dry, otherwise the fruit crop will be small.

THE KITCHEN GARDEN.

By J. MAXNE, Gardener to the Hon. MARK ROLLE, Trecton, East Radcliffe, Devonshire.

"Winter-sown" Cauliflowers.—From seed sown in warmth the third week in January last we were enabled to cut useful heads at the end of the month of May, or about four months from the date of sowing, which is good work for such a cold late spring as that of this year. When the ground on which these grew is cleared of the crop, it will be dug, levelled, trodden evenly all over, and drills drawn at a distance of 15 inches apart, and sown with Endive. Cauliflowers still to be planted should be afforded well-manured ground, which should be made firm before planting it. Do not let the plants

suffer from lack of water, or the produce will not be worth much; and do not neglect to mould up the stems when the plants are about half-grown.

Turnips.—A good breadth should now be sown of the varieties Red Globe and Orange Jelly, the drills being previously moistened. The ground for this sowing should be in good heart, quick growth being very desirable as affording a better chance of the plants to survive the attacks of the Turnip-fly. Then earlier sowings before the plants become crowded, leaving them at 6 inches apart.

Capsicums.—If the climate is warm enough for their successful cultivation, plant them out rather than grow them in pots. For planting out harden off the plants in cold frames, or in some protected corner, and do not let them lack water at the root. Having dug the ground deeply at the foot of a south wall, or forming a part of a south border, and made it moderately firm, set out the plants at 2 feet apart, and afford water copiously to settle the soil about the roots, and afterwards whenever the soil is getting dry. Those who cannot plant out may grow them in frames, either in pots or planted out, or in any spare forcing-house. The plant is liable to be overrun with red-spider if it be not frequently syringed.

Lettuce.—Make sowings at intervals of fourteen days, where the plants may stand till they are fit for consumption, moistening the drills, dropping a few seeds in groups at a distance of 1 foot apart. If the weather is showery when thinning has to be done, the thinnings might be transplanted, otherwise it is wasted labour to plant in this month and early in the next.

THE FLOWER GARDEN.

By T. H. STANK, Gardener to Lord Baltimore, Baltimore Park, Exeter.

Cistus, Rock Roses.—Rock Roses make a pretty display where the soil is light and sandy, the position open and sunny, and the spot a fairly dry one in winter; they are therefore most at home on rockeries and warm, dry banks. The flowers do not last long, but they come in long succession, and are of bright and pleasing tints. The plants vary in height from 2 to 5 feet, and the best are *C. laurifolius*, white; *C. formosus*, yellow; *C. ladaniferus*, white; *C. albidus*, rose. The white-flowered species have their flowers marked with purple, red, or yellow blotches, and are very attractive, while the rose-coloured flowers have a yellow centre, with numerous stamens. Cuttings of half-ripened shoots will root without difficulty in a cold frame, or under a hand-glass shaded from the sun; and if a few be struck annually, the loss of a plant or two is of but little consequence.

The Bog Garden.—Gunneras should have their growths reduced, if encroaching on the weaker plants. Patches of *Tiarella cordifolia* are beautiful objects when planted in this part of the garden, and make lovely masses; it is a plant not often met with. The bronzy-red leaves form a pleasing contrast with the small spikes of white flowers. I have it in different positions, but the plants are not happy if in too dry a spot, or in too tight a soil.

Philadelphus.—Young plants will not require much attention in thinning the shoots, but older flowering plants are the better for having some of the older shoots removed. *Philadelphus* present the best appearance when afforded plenty of space, or as solitary specimens on the turf. Of newer varieties, the following may be mentioned, viz., *P. grandiflorus*, one of the best and largest-flowered; *P. Keeteleeri*, a good double variety; *P. Gordonianus* is an excellent variety; while the small flowered *P. microphyllus* makes a small, neat bush. These varieties are not so strongly scented as the old *P. coronarius*; and all are worthy of a place as solitary plants on turf, or planted among low growing plants, where the branches can arch over almost to the ground.

Clematis.—Frequently regulate the growth, for while they form pretty pictures in tangled masses, they are more gaudy than when their shoots receive some amount of training. They are moisture-loving plants that suffer in the size of their blooms if stinted of water at the roots. A slight mulch also assists them.

Flower-beds.—Peg down trailing plants, previously stirring the surface of the bed with a small single-handed hoe or hand-fork. If the flower garden display is not required till late in the season, remove the flowers from Pelargoniums, Fuchsias, Tropaeolums, and fibrous-rooted Begonias.

Brompton Stocks.—Seed should be sown for next season's flowering, sowing in pans or boxes, and standing them in a cold frame till germinated, and then freely exposing them.

PLANTS UNDER GLASS.

By D. BOMPERS, Gardener to HERSEY PARK, Eps.,
Pre-stwood Hall, Longhborough.

The Conservatory.—Continue to give regular attention to the tying and regulation of the growth of climbers, generally removing or reducing the number of weak growths. Heliotropes and Pelargoniums growing against walls should be pruned sparingly, so that new growths will be made in good time for flowering in the winter season. The Camellias, Oranges-trees, and other permanent occupants must be kept clean, and free from insects by sponging the foliage with sapsuds containing a winglessful of petroleum to 2 gallons of water. Achimenes in pots and baskets may be brought into this house when the first flowers open, and the remainder of the plants in successional batches. Begonias, Fuchsias, show and zonal Pelargoniums, *Cosmia plumosa* and others, Balsams, and *Coleus* will now be available for decoration. A weekly change of flowering plants is desirable at this season. Afford ventilation day and night, more being applied by day.

Leaf-veined Pelargoniums.—As the plants grow in size, afford supports to the young growths in the form of neat sticks, for which purpose a tripod of Bamboos, 3 to 4 feet in height, is excellent if securely fixed together at the apex with tar-twine. By the autumn such plants form pyramids of great beauty for use in the conservatory. Continue to pick off all flowers from plants intended for flowering in the autumn, and apply manure-water after the pots are filled with roots. Pinch the points of the more vigorous shoots, and maintain a balanced growth by frequently turning the pots round to the light. Sprinkle freely after hot days, using a little soft-soap in the water occasionally to prevent infestation by thrips and aphides. Like zonal Pelargoniums, these plants are better for full exposure out-doors at this season.

Mignonette.—A sowing made now will be ready for autumn flowering in large 18's, filled with a compost consisting of good turfy loam three-quarters, leaf-soil quarter, adding a little dry cow-manure rubbed to a fine powder, and some mortar-puddle. Make the soil very firm, and fill to within an inch of the rim. Sow a dozen seeds in a pot, and when germinated, reduce to four or five; place in a frame, and apply shade until the seedlings appear, affording water at all times when the surface of the pots indicates that the soil requires it. The plants must have abundance of air, the lights at night being pulled off. A sowing may be made a month hence. Pick off the flowers from the earlier plants, and put sticks in the form of a tripod if pyramids are wanted. When plenty of roots are formed, afford manure-water.

FRUITS UNDER GLASS.

By MITCHELL 26, ESTERIE, Gardener to SIR CHAS.
LESLIAN, The Glen, Inverlathie, Peebles-shire.

Pineapples.—It will soon be time to take suckers from off the summer-fruiting plants, and make provision forthwith for rooting them, so that they may have the benefit of summer

heat for as long a period as possible. The chief essentials are a hot-bed made of leaves and stable-manure, a low pitched house or pit, a steady bottom heat of 50 at 6 inches below the surface, a few degrees higher (say 95) being allowable at the start. The suckers should be separated from the mother plants with a twist, be divested of a few of their lower leaves before planting them in 5 or 7-inch pots according to size, and affording them water once in order to settle the soil about them. Good fibrous loam torn up by hand, and unmixed with anything, is the most suitable compost. It should be made firm about the sucker, which will tend to cause speedier rooting. The house or pit must be kept rather close and humid for ten days, or a fortnight, and the suckers well shaded from the sun, and dewed over with a fine syringe or water-can once or twice a week, according to their needs. As soon as growth has begun, ventilation should be increased by degrees, and less shade applied, till the plants become inured to the sun, when ordinary Pine-stove treatment should be afforded. The young plants should not be allowed to become pot-bound, but the growth should be accelerated so far as is consistent with a sturdiness; consequently there must not be any delay in shifting into larger pots, immediately the roots have taken a firm hold of the soil, and before they become matted together on the sides of the pots, which for Queens and Black Jamaica may be 10 inches, and for others 11 or 12 inches, using fibrous loam with the fine particles sifted out of it, more lumpy than for suckers, adding a sprinkling of Thomson's Plant Manure; and to prevent worms entering the pots, a handful of fresh soot should be sprinkled over the crocks.

Water to Melons. The soil of a Melon-bed should not lack moisture, nor should the plants ever be allowed to flag from that cause, as when this occurs a harmful check will have been given to the plants. Too much watering is even more injurious, and that being so, water should not be applied before the soil has become too dry for the support of the plants, but before they flag. Plants with growing fruit on them will require water at the root once a week, even such as have large rooting-space; whilst those in small, confined beds may need water twice a week; plants in boxes on alternate days, or still more often; and those grown in large pots will need water or liquid-manure once or twice a day. When setting the blooms, it will be sufficient to keep the foliage from flagging; and if water becomes necessary, it should be applied without wetting the surface more than can be helped. A poor growth is not good either for setting or ripening the fruit, but a drier condition of the soil is more desirable at those times than when the fruit is swelling.

THE ORCHID HOUSES.

By H. J. CHAYMAN, Gardener to R. J. MEYER, Esq.,
Cambridge Lodge, Golden Road, Croydon.

Calanthes. These plants are now at a stage of their growth when means should be afforded as will enable them to fully develop the pseudo-bulbs. In some gardens, where large numbers of Calanthes are grown to furnish flowers for cutting, no special facilities exist; but the plants must be accommodated in houses in a certain degree unsuitable, and I have often been surprised at the excellent results obtained. It is true that the needs of the plants when potted in the spring are easily met, but it is when growth advances, and more space is required, that difficulties occur, and the shelves in the houses are filled with plants that are being forced, or with newly propagated plants. It becomes necessary as soon as space can be found to place the Calanthes in positions in which the maximum amount of light, combined with a hot, humid atmosphere, are obtainable, and the shelves in vineries and other forcing-houses afford these conditions. If the plants have not been exposed to plenty of light, but little shading, if any, will be called for, but if otherwise, the glass should be coated with whitening outside. The

plants, when thus grown, need considerable quantities of water; and when the soil is filled with roots as often as twice or three a day in hot weather. At that period clear, weak liquid-manure is of great benefit to them, especially that from a farmyard, which may be applied twice and three a week. In dull weather care must be taken not to afford excessive quantities of water, or the black spots that give so unsightly an appearance to the leaves may make their appearance. This spotting being also detrimental to growth, should be avoided most carefully. A close watch should be kept for red-spider and scale, and as soon as either is apparent, the leaves should be cleaned with a sponge dipped in warm soapy water.

Seedling Orchids.—The seeds which were sown in the month of February, March, and April did not germinate so quickly as usual, owing probably to the lack of sunshine, but the plants have made satisfactory progress lately. The seedlings of Cattleya and Laelia should be removed as soon as they can be conveniently handled, and transplanted into those tiny pots that are purposely made for this kind of work. A few small crocks should be placed in the pots, and over these some finely chopped sphagnum-moss and turfy peat, in the proportion of two of the first to one of the second, and to this a little rough sand or finely-broken crocks may be added. I find a pointed stick the best implement wherewith to transfer the seedlings from the seed-pan to the pots. The materials should be pressed as firmly about the roots as is safe with such tender things. Apply water with a fine spraying-syringe, and place the pots where rapid growth may be assured. The plants will begin to make roots when the first leaf reaches maturity, and sometimes sooner. Dendrobiums grow more quickly, but the seedlings should be afforded exactly similar treatment to Cattleyas, excepting that more light may have access to them after the formation of roots has begun. Miltonias, Cymbidiums, Zygopetalums, and *Aplopodiums* are not so difficult to manage, neither do they germinate to anything like the same extent as Cattleyas; but the seedlings grow more rapidly, and as a consequence they are more easily brought on. It is not advisable to remove these from the seed-pan before the first leaf is matured or the roots have pushed forth; they may be picked out a number together in a pot, although I prefer to establish each in its own pot, doing this as soon as practicable, the plants making more progress by so doing. Bell-glasses or close cases may be placed over the tenderer species, these affording the regular conditions of heat and moisture. *Pterocarpus* must be taken to prevent the seedlings becoming dry, or being washed out of the compost when applying water. In bright weather the seedlings should be very lightly sprayed twice a day.

WEATHER AND PLANT LIFE.—According to an elaborate report, based on the most recent knowledge, just issued by the United States Weather Bureau, it is nihilism (the chemical action of sunshine) that is the dominant factor in plant growth. "The temperature of the air," we are told, "has apparently little to do, in and of itself, with the duration of time from sowing to ripening. This depends principally on the sunshine. The temperature of the air controls the chemical composition of the seed somewhat, but the effective sunshine is the productive climatic element, for it furnishes the total energy at the disposal of the plant." An example is given in the case of Maize. The temperature of parts of England is quite as high as in places in North America, where Maize grows freely and ripens well. It is regarded as absurd that such an insignificant item as a deficiency of two degrees Fahrenheit on the mean of a single summer month, as compared with the Western States, should exclude this crop from the British Isles, where it seldom matures its grain. The reason seems to be, that the English climate is hostile to this plant solely owing to its greater amount of cloudiness.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the revised communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 6	Royal Botanical Soc. Meeting. Society Française d'Horticulture de Londres, Meeting.
SUNDAY, JULY 7	Great Horticultural Exhibition
TUESDAY, JULY 9	Wolverhampton Horticultural and Floral Fête (3 days)
WEDNESDAY, JULY 10	Horticultural and Rose Shows at Tambridge Wells, and Furnby, Lancashire.
THURSDAY, JULY 11	Bath Floral Fête and Rose Show.
SATURDAY, JULY 13	Manchester Royal Botanical and Horticultural Society, Rose Show.

SALES.

TUESDAY, JULY 9.—Sale of Orchids, Palms, &c, by Mr. Rendell, 26, Bucklersbury, E.C.

FRIDAY, JULY 12.—Sale of Orchids, at Protheroe & Morris's Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick.—63.3

ACTUAL TEMPERATURES.—

LONDON.—July 3 (P.M.): MAX. 73; MIN. 57.
July 4.—FINE, WINDY. Rose-show weather.
PROVINCES.—July 3 (P.M.): MAX. 70, Home Counties; MIN. 53, N.E. Scotland.

WE KNOW the dire consequences that ensued when PLANTAGENET plucked a White Rose from off a Briar in the Temple Gardens, and SOMERSET gathered a Red Rose from a Thorn in the same pleasure. Little could those warriors have anticipated a tented field in the Twentieth Century put to such very different uses as those which the National Rose Society effected on Thursday last. Struggle and rivalry indeed were there, but without strife or ill-feeling. Red Roses and white Roses were at the Temple in far greater profusion and variety than they could have been in SHAKESPEARE'S time, as well as yellow Roses, and Tea Roses, and Roses of forms and hues undreamt of by him. Briefly, we congratulate the National Rose Society on the success of their enterprise, and we heartily thank the secretaries and the executive for the excellent way in which they fulfilled their arduous task. In another column we give a Report of the show, and if it is not so complete and free from error as it might be, we must remind the reader that these pages were actually passing through the press at the time that the show was held, so that adequate revision was almost an impossibility.

One most gratifying feature is the growing tendency, as evinced at the Temple, to show the flowers to advantage in vases and in picturesque groups, as well as in the hideous boxes, which, if it were possible, would detract even from the beauty of a Rose. They render a Rose-show as monotonous and unattractive to the public as a—well, as a Dahlia show. Sympathy, intelligent admira-

tion, interest, and appreciation vanish at the sight of those dreadful boxes. We have always been told that the accurate comparison required by the judges can only be obtained by following the old-fashioned method. This is a dictum from which we respectfully venture to dissent; or if it be true, we should prefer either not to have such minute analysis, or, if that is inevitable, that it should be done in private. The glorious groups of Chrysanthemums, and the beautiful arrangements of single Dahlias, show what can be done without in any way obstructing the scrutiny of the judges.

The Temple Rose show was favoured with brilliant weather, and was honoured with a visit from H.M. the QUEEN. As was fitting, a bouquet of Roses was presented to her by the granddaughter of Dean HOLE, the President of the Society. The bouquet consisted of the new Rose Queen Alexandra, raised and supplied by the Messrs. VEITCH, and of the better-known Rose Her Majesty, raised by the late HENRY BENNET.

The show was very large, the special features being the garden and decorative Roses. Hybrid Perpetuals seemed to us to be scarcely up to the mark, but Tea Roses were in good form. Table decorations, too often heavy or uninteresting, were on this occasion very beautiful, as may be gathered from our report.

When we heard of the enterprise of the National Society in conducting a grand Rose show in the Temple Gardens—an ideal place to hold such an exhibition—we determined to have a Rose show of our own, and to lay before our readers illustrations of the very newest Roses that are to be seen, and a selection of exhibition Roses of such acknowledged merit that they are to be met with in every Rose show of the kingdom. In carrying out this idea, we have to express our acknowledgments to Messrs. W. PAUL & SONS, to Messrs. PAUL & SOX, BEN CANT, GEORGE PRINCE, and to Miss GIRDLESTONE, who kindly placed at our disposal a series of photographs from the collection of her late brother a rosarian as discriminating as he was enthusiastic. Of the older well-known Roses we need say little; let the illustrations tell their own tale. Of the newer ones a few notes of description are requisite.

The variety Conrad Ferdinand Meyer (see fig. 2) was exhibited from the gardens of LEOPOLD DE ROTHSCHILD, Esq. (gr., Mr. HUDSON), at a meeting of the Royal Horticultural Society on June 4. It is said to have been raised by Dr. MÜLLER, and by successive crosses, in which were used Gloire de Dijon, Duc de Rohan, Maréchal Niel, and Rosa rugosa. It has bloomed abundantly this season from the old wood, and the flowers are nearly 4 inches across, very fragrant, and of the beautiful colour characteristic of La France. It is a strong and clean grower, and throws up strong shoots from the root stock. It is expected that the variety will bloom in the autumn as well, but this remains to be proved. The Floral Committee of the Royal Horticultural Society awarded the variety an Award of Merit by a small majority when it was exhibited under the name which accompanied the variety from Germany, namely, Rosa rugosa germanica Conrad Ferdinand Meyer.

Soleil d'Or (see fig. 4) has been exhibited by Messrs. W. PAUL & SOX as plants in pots.

The variety was obtained by crossing Persian Yellow and Antoine Ducher. In character it most resembles a hybrid perpetual, and produces double flowers 3 to 4 inches across, of very deep apricot colour, shaded in the centre with orange. The foliage is like that of Persian Yellow, and the variety will be found a distinct and valuable novelty. It has been awarded an Award of Merit by the Royal Horticultural Society.

The Lion (see fig. 5), is a new large single-flowered Rose, shown by Messrs. G. PAUL & SOX Chesham, at the National Rose Society's show at Richmond, where it was commended. In colour it is bright rosy-crimson with a white centre. It is a seedling from Crimson Rambler crossed with Beauté Inconstante.

Ben Cant (see fig. 6), is a new H. P. variety shown by Messrs. B. K. CANT & SONS, and awarded the National Rose Society's Gold Medal. The flower has exceedingly broad petals, a characteristic well displayed in our illustration, and this virtue in company with its brilliant crimson colour, shaded with violet, are the points that obtained the Gold Medal. A good bloom was shown at the Drill Hall on Tuesday, 2nd inst., in Messrs. CANT'S 1st prize exhibit of twenty-four Roses distinct.

Longworth Fairy, figured in our special supplement, as its name implies, is a Rose from Mr. GEO. PRINCE, of Oxford, who succeeds so well with Tea-scented Roses generally. The variety we now illustrate is a new Tea-scented Rose that blooms early, is very deep pink in colour, approaching that of Mrs. W. J. Grant, and very fragrant; it has very large rough-surfaced leaves. The other Roses figured are Innocente Pirola, The Bride, Souvenir d'Elise Vardon, Princess of Wales, Climbing Devoniansis, A. K. Williams, Comtesse de Nadailac, and Susanne-Marie Rodocanachi.

ROYAL HORTICULTURAL SOCIETY. — At a general meeting of the Royal Horticultural Society, held on Tuesday, July 2, thirty new Fellows were elected (making 614 since the beginning of the present year); amongst them being Lady MARGARET BOSCAWEN, Lady BICKERSFITH, Lady TESSANT, Lady WHITEHEAD, and Surg.-Col. ARTHUR SANDERSON, A.M.C.

LILY SHOW AND CONFERENCE. — The Royal Horticultural Society will hold an exhibition of Lilies in their gardens at Chiswick on Tuesday and Wednesday, July 16 and 17. The committees will meet at 11 A.M., and plants, &c., for Certificate will be placed before them as at the usual meetings in the Drill Hall. The gates will be open at 12 noon on July 16, closing at 7 P.M.; and at 11 A.M. on Wednesday, closing at 6 P.M. Fellows admitted free on showing their tickets. A Conference on Lilies will be held at 2 P.M.

CRYSTAL PALACE FRUIT SHOW.—Schedules of the eighth annual fruit show to be held at the Crystal Palace, Sydenham, on October 10, 11, and 12, are now ready, and may be obtained on application to the Secretary, 117, Victoria Street, Westminster, S.W. Applicants should enclose a stamp.

THE WEATHER.—We sometimes hear of the weather "breaking-up" when a change is impending. Now printers have found a method of breaking the weather which suffers from climatic evils might envy. As our weather paragraph was passing through the press last week, "The Weather" was smashed in the printing machine, and appeared in a maimed condition in our last issue—another instance of the power of the press.

THE INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, ARTS, AND EDUCATION, will hold its second international meeting at Glasgow, in the University and to the International Exhibition, from July 29 to September 27, 1901. Besides serving as a link among universities and learned societies, &c., one of the most important functions of the meeting will again be, as at Paris last year, to study and interpret the matters of scientific,

Methods of Science Study, Modern Language Study, Manual and Technical Education, Museums, Geographical Education, History and Organisation of Secondary Education, the whole concluding with a series of conferences on immediately "Realisable Progress in Education." The General Secretary is M. LIARD, Permanent Secretary of State for Higher Education, Paris; assisted by Prof. PATRICK GEDDES.

Rose, grows near an Apple-tree! One hypothesis is as good as another (till it is disproved, and so we insert, as an hypothesis (not as fact), that a horse belonging to one of our correspondents has developed two horns and a dewlap from being kept in the same field with his cow. The five "perfect" Apple-blossoms were no doubt superfluous flowers, such as characterise proliferous Roses. If the journalists who are tempted to insert such statements would previously consult some expert who would give the information, if not as a matter of professional courtesy, at least for a trifling remuneration, how greatly they would add to the confidence which their readers would repose in their utterances.

GERMINATION OF THE BRAZIL NUT.—Mr. WATSON describes in the *Annals of Botany*, March, 1901, the germination of the embryo plants in this species. The fruit, as is well known, is a globular, woody fruit with an aperture closed by a plug formed by the hardened calyx. The seedlings begin to germinate within the fruit, and under natural circumstances they displace the plug and push through the aperture. While within the bony fruit there is a fierce struggle for existence, and the young plants become compressed as they emerge from the aperture to such an extent as in some instances to die back. Adventitious shoots were, however, formed in some cases. Roots are sometimes not formed, the young embryos obtaining in the first instance their nourishment from the kernel of the nuts.

THE FLOWERING OF AMORPHOPHALLUS TITANUM AT KEW.—Mr. N. E. BROWN writes:—"For the second and only times of its flowering in Europe, visitors to Kew Gardens during the past few weeks have had the chance of seeing the flower of this giant Aroid develop. A full account of the discovery and first flowering of the plant will be found in the *Gardeners' Chronicle* for 1878, x., p. 596, 788; for 1889, v., p. 759, figs. 119, 120; and vi., pp. 12, 19-21, figs. 3, 5, and 6, which may be thus summarised. It was discovered in 1878 by the Italian traveller, Dr. BRECCIA, who sent tubers and seeds of it to Florence. Owing to the absurd Phylloxera laws, the tubers were not allowed to enter the country, and so perished; but the seeds germinated, and one that was sent to Kew in 1879, after ten years' successful cultivation, flowered in June, 1889, an achievement greatly to the credit of the Kew staff, since all the plants grown on the continent died without having flowered. About two years after flowering, the Kew plant also died, possibly because the limit of its existence had been reached. The tuber of the plant that has just flowered was received at Kew two or three years ago, and this year showed signs of flowering. At the beginning of June the flower-bud was only 3 or 4 inches high, 13 inches on the 8th, 11 inches on the 21th, and 19½ inches high on the day of opening, June 28, the rate of growth being nearly 2 inches per day. It began to open in the afternoon, by 6 P.M. it had fully expanded, and was partially closed the following morning; as, unlike the other species of this genus, it only remains fully expanded for the one night. The spathe of the present flower when fully open was 18 inches deep, and 23 feet in diameter; the outside is smooth, and light green, spotted with whitish on the basal part, above which it is strongly ribbed and deeply fluted, the margin being irregularly plaited and toothed; the ribs are white, the folds between them being light purplish. Inside the spathe is rich dark purple, overspread with a "bloom" or velvety sheen, the basal



FIG. 5.—NEW SINGLE-FLOWERED ROSE "THE LION"; COLOUR ROSY-CRIMSON, WITH A WHITE CENTRE. MUCH REDDED. (SEE P. 10.)

geographic, and other interest afforded by the exhibition, by means of lectures and conferences, with demonstrations and visits under skilled guidance. The various national groups which co-operated last year at Paris will again be represented at Glasgow; and their lectures and conferences, &c., will include Pure and Applied Physics and Chemistry, Electricity and Engineering, Agriculture and Forestry, Geography and Colonisation, Hygiene, Scottish History and Archeology, Fine Art, &c. Much attention is also being paid to education in its many branches—Child Study, Nature Study,

THE BIG GOOSEBERRY SEASON appears to have set in with prematureness and severity. In one provincial journal we read of a cat sitting on pigeon's eggs, having displaced the mother on two occasions. In another—indeed, in several (for the copyists rarely think either of verifying their quotations or of substantiating their "facts")—we read that five perfect Apple-blossoms grew in the centre of a Rose. The Apple-blossoms opened as the petals of the Rose developed, the two forming a strange contrast. That is the statement of fact—now for the hypothesis. It, that is the

part being smooth, and greenish-yellow in colour. The columnar spadix is 3½ feet long, and 7 inches thick, of a dull olive colour, bearing dark purple ovaries with long styles, and yellow stigmas at its base. As seen from above, the form and colour of the spathe are very pleasing and effective. The odour, however, is not quite so enticing, being very disagreeable if the nose is held directly over the spathe, and to some people is nauseating if near the plant; but it is not nearly so offensive as that of some other species. As evidence of this, I may say that myself and four others, one of them a lady, were shut up in the house with and close to the open flower for just one hour, whilst photographs of it were taken, without feeling the slightest inconvenience or trace of nausea. The odour ceases when the flower closes the next morning. With regard to temperature, the spadix and interior of the spathe was decidedly warmer than the surrounding air, but I am informed that a clinical thermometer only showed a difference of a few degrees, and it was certainly much less heated than I have found several species of *Philodendron* to be. From the dimensions given, it will be seen that this flower is very much smaller than that of 1889. As it is likely to be rarely seen in flower under cultivation, and then remains expanded for one night only, very few people can hope to see this giant Aroid flower in its most perfect condition."

A FATAL GUN ACCIDENT AT EVESHAM.—Early on Saturday morning, BERTHA WIDOWS (twenty-eight), wife of WILLIAM JOSEPH WIDOWS, market gardener, of Evesham, was accidentally shot by her son OWEN, aged eleven, and received such terrible injuries that she died a few hours later. Mr. WIDOWS, about seven o'clock in the morning, took his gun to the garden adjoining the house for the purpose of scaring birds. His attention was called to the back of the house, and he placed the loaded gun against a wall, telling his son not to touch it; the boy, however, in his father's absence, carried the gun to the house, out of the way of his two younger brothers, who were playing near, and as he was entering the door, he states that the muzzle caught the woodwork, and the gun was discharged. Mrs. WIDOWS was sitting by the kitchen fireplace, and she received most of the charge in her face, both eyes being destroyed. At the Coroner's enquiry, held on Monday, the jury returned a verdict of "Accidental death," and a vote of condolence with deceased's relatives was passed.

HOME CORRESPONDENCE.

THE HOUSE SPARROW.—I quite sympathise with my old friend Mr. Harrison Weir in his opinions concerning sparrows. I have watched them somewhat carefully, and can only put down their depredations to a quarrelsome temper, as I have frequently found feathers scattered near where the flowers are bitter. The way that the pieces of Crocus, &c., are thrown about and not eaten, shows that it is not for food or medicine that they bite them. When the weather is going to be colder they invariably attack the Polyanthuses and Primroses, as if the cold made them uncomfortable and cross. But when the weather is warmer, it seems to be more by way of mischief; nothing but black thread keeps them off the Crocuses. Two or three settled down one morning on a patch of *Arabis alpina*, and another of *Alyssum saxatile*, and began picking off the flowers and flower-buds and throwing them about and not eating them. *Anemone angulosa* has no chance unless covered with glass, so long as the air is cold. One day I

found they had bitten pieces out of a flower-bud of the Tenby *Daffodil*; and only a week ago, I found they had got amongst the bog plants that I keep in pots in a shallow tank, and had pulled up and tossed about *Helleborum verticillatum*. That was the last straw. It is now war to the knife! or any other instrument of destruction that I can use against them. The birds were quite young sparrows, and seemed to enjoy the fun. Greenfinches are almost as bad, but do not visit me often. As soon as they get their dismal long-drawn screech, I go out and stow them, as they have a habit of pulling up and laying on the ground Lettuces and other seedlings. With respect to other birds, starlings, thrushes, blackbirds, and hedge-sparrows, all visit the garden, and I regard them as friends. The small blue-tit never does any harm to the Currant or Goose-berry bushes, as they bear quite freely after it has visited the bushes in winter. I am not sure which tit it is that samples the Pears near the stalk before they are ripe, and spoils them for keeping; but I do not think it is the small blue-tit—probably the greater tit. But I saved my *Dryopteris* *Comice* last year (pyramid tree) by tying a muslin bag round each of the young Pears. The bullfinch has not tried the fruit-hedges since I anointed them with a mixture of eucalypt powder and flour paste. This I do before the severe frosts come in December. *Serpentaria*.

BOLTING OF CABBAGES.—As John Pope, of King's Norton, has fully let "Old Kemp's" of Cabbages, seedsmen will now be able to dispose of their old stock of Cabbage-seeds without going to the trouble of having them properly mixed with new seed. Out of a hundred bags of seeds rightly are sold, and twenty are left unsold, which are a considerable loss if not mixed with fresh stock. Therefore there will be no difficulty of that matter now. In my lifetime of over fifty years a head gardener, having always dealt with respectable seedsmen, I cannot say that I have been much troubled with bolting Cabbages. My sorts were generally the following: Little Pixie first, then Elham's, Sutton's Flower of Spring, and Enfield Market. There used to be a Downton Hall Cabbage supplied by the Dicksons, of Chester. Rather a light green variety, a very tender and an early sort, it never had many flaky leaves about it. It began to bolt at once. I grew it as long as I could get the seed. I never yet saw a bolter amongst them. The Messrs. Dicksons must have known the secret then, that it is quite safe to sell old Cabbage-seeds. It will be thirty years since this variety was lost to the trade. I think the variety was raised by the late Mr. Mackie, of Downton. *From the Banks of the Mole.*

FROST IN NORTHAMPTONSHIRE IN JUNE.—On Wednesday, June 19, we registered 7° of frost here, which blackened Runner Beans and second Early Potatoes, also Dahlias, Heliotropes, Begonias, *Fuchsia*, *Zinnias*, &c., also the top young growths of Laurels nearest the water. The gardens round this neighbourhood facing south-east have escaped, but facing north-west they have suffered most, especially in low-lying districts. On several occasions we have had frost here in June; for instance, in 1892, on June 14 and 15, we had 5° and 7° respectively; in 1895, on June 15, there was 5°; and 1898, on June 15, we had 4°. In 1892, when crops were more forward, they suffered more than now. In 1895 all the early Potatoes and Vegetable-Marrows were cut down, and likewise some of the bedding-plants. My thermometer stands 3 feet from the ground facing north-east, 10 feet above the water. *H. Thayer, Fineshade Abbey Gardens, Stamford.*

GREENHOUSE HEATING.—If petroleum be used in the simple manner explained on p. 291 of a recent issue, it would certainly be a very great boon, and where the gardener has not a large house or a number of houses to be heated, it should, I think, answer for small boilers; but I fear it would be useless to nur-

serymen and others who have coke furnaces, heating some thousands of feet of 3-inch hot-water pipes. And, then, does Mr. Ward understand he cannot obtain patent rights for a broad, general idea, such as he sets out, and which I doubt very much would be found to be a new idea? When he himself has tried the plan he so well describes, and finds it to answer, he can then take out a provisional patent and go on experimenting with it until at the end of nine months he has to make a final specification, stating exactly what he claims as new in the apparatus. Unless he does this, someone else, meanwhile, might take out a patent. Mr. Ward has no protection in stating, as he does in the last paragraph of his note, that "I reserve to myself all rights, &c." *Alfred Chandler, Torquay, June 16, 1901.*

THE DRILL HALL MEETINGS.—Under no conditions of pressure could the walls of the James Street Drill Hall expand and allow of more room within that somewhat capacious building at the first June meeting, in spite of every effort to crowd in all the material sent for exhibition, and as a consequence very much had to be taken home again. That was to be deplored, but under the circumstances could not be helped, although much disappointment and complaint resulted. If that state of things is to be often repeated, it is evident that some drastic course will have to be taken by the Council to meet the difficulty. We may put aside the provision of a large Hall at present. Even if practicable, a long time must elapse ere it could be furnished. Then there is the course open of securing the adjoining large Drill Hall for the overflow of the present Drill Hall. That may or may not be practicable. There is also a remedy to be found by holding the meetings weekly during some three months of the year, and in preventing those persons who sent groups in one week from sending in the ensuing week. This would, of course, be a matter of some expense, though not great; but the chief difficulty would be found in getting the members of the committees to attend so frequently. Failing that arrangement, there seems to be no other course open but to intimate that only a certain space can be allotted to any one firm or exhibitor at each meeting, taking care in that way that it be not excessive. But it should also be arranged that no entries will be received or space granted unless the entries were posted not later than the Friday preceding. These entries ought to go direct to Mr. Wright at Chiswick, for if sent to Victoria Street they often do not reach Chiswick until midday on Monday—certainly much too late. *A. D.*

Obituary.

JONATHAN SQUIBBS.—We briefly announced in last week's issue the death of Mr. Jonathan Squibbs and his wife Felicité Squibbs, who died within twenty-four hours of each other after forty-three years of married life, both having endured great suffering during the last three years. The former was a member of an old and well-known family of gardeners. He was apprenticed and gained a material part of his professional knowledge under a well-known gardener, the late Mr. Cox, of Redleaf, Penrhurst. From thence he went as foreman to Kimmel Park, Abergole, under Mr. Mumford, which situation he filled most satisfactorily. At the death of his father, William Squibbs, who had been head-gardener at Rooksnest, Godstone, for forty years, he succeeded him, and remained there upwards of thirty years; and for ten years he was gardener to the late Mrs. Wilkinson, of East Hill, Oxford.

Mr. Squibbs leaves five sons and two daughters. Two sons follow their father's profession, one being gardener to the Dowager Lady Wynn, at Llangsdwyn, and the other to Sir Matthew Wilson, of Eshon Hall, Gargrave, Yorkshire.

The deceased was for thirty-seven years a

subscriber to the Gardeners' Royal Benevolent Institution, and also collected a substantial amount towards the funds of that admirable institution. He held the certificate of the Royal Horticultural Society for having been

a highly successful florist and fruit-grower in Aberdeenshire and Kincardineshire. Born in 1821, Mr. Sim chose gardening as his profession. Early in his career, he showed a strong inclination for botany, and made an

nection. About forty years ago Mr. Sim removed to Gateside, Strachan, on Deeside, where he commenced on an extensive scale the cultivation of Strawberries. So successful was he in his enterprise that his example was



FIG. 6.—NEW H.P. ROSE "BEX CANT."

Awarded National Rose Society's Gold Medal at the Richmond Show, and exhibited at the Drill Hall, July 2. (See p. 10.)

the first to flower *Rhododendron argenteum* in England; and was well-known and sought after as a judge at many provincial horticultural shows.

JOHN SIM.—The death occurred on Monday evening, the 21th ult., at his residence, West Cults, a suburb of Aberdeen, of Mr. John Sim,

exhaustive study of phanerogamic, and subsequently of cryptogamic botany, more especially of the sphagnum. Some forty years ago he published a complete botanical survey of Scotston Moor (near Aberdeen), and Dr. Alexander Walker, in his *Commonly of Periwinkles*, makes hearty acknowledgment of the valuable work done by Mr. Sim in this con-

nection. About forty years ago Mr. Sim removed to Gateside, Strachan, on Deeside, where he commenced on an extensive scale the cultivation of Strawberries. So successful was he in his enterprise that his example was followed by scores of farmers and crofters in his district, who by these means discounted the severity of bad times, and gave the district its present well-known reputation as a centre of Strawberry culture. Remaining at Gateside for some twenty years, Mr. Sim purchased a small property known as The Temple, near Stomchaven, Kincardineshire, where he con-

timed his business of florist and fruit-grower. In his botanical researches, Mr. Sim came into contact with most of the prominent botanists of the day, by whom he was held in much esteem. His eldest son, Thomas, was educated in Oxford at Chiswick, Kew, and afterwards at Harvard University, United States. He was appointed to the Forestry Department in South Africa, where he was lately joined by his brother James, who is also an enthusiastic botanist. Another son has taken up the seed trade. Mr. Sim, who wrote much on botanical and kindred subjects, was an amiable and attractive man, and his passion for flowers remained with him to the end of his life. His death will be regretted by a large and attached circle of friends.

T. BUTTON.—Thomas Button, thirty years of age, and for some years foreman in the Peach-houses at Mr. James Walker's fruit-growing establishment, Ham Common, near Kingston-on-Thames, met his death on the 25th ult. under unusual and distressing circumstances. Deceased has finished his dinner, then gone out on to the common close by, where some of his assistants were playing cricket. He asked to have a hit, and was bowled to by young Mr. Hearsam, of Kingston, who is a pupil under Mr. Walker. After being served with several balls, one which happened to be a full pitch, struck Button on the side of his head just behind the ear, he having a habit of turning his head from the ball. Deceased fell, and very soon expired. Mr. Hearsam, who entertained for Button the warmest good feeling, was terribly distressed at the unfortunate occurrence. At the inquest held two days later, a verdict of accidental death was recorded. Mr. Walker, in thus so suddenly losing his house-foreman, merits much sympathy, for he has long been very ill. Deceased leaves a widow, but no children.

LAW NOTE.

ORCHID WARRANTY CASE.

Mr. JOHN RUTHERFORD, M.P., brought an action in the King's Bench, on July 3, against L'Horticole Coloniale of Brussels, to recover damages for breach of warranty of an Orchid purchased by him four years ago as *Odontoglossum crispum* var. *Rambouillet*. He gave £80 for it, but when it bloomed two years later, it turned out to be a variety worth less than £5. A verdict was given for the plaintiff for £114 damages and costs.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 2.—The Drill Hall had quite an unusual appearance on Tuesday last on the occasion of the usual fortnightly meeting, for, excepting plants and fruits that were shown for Certificates, the display was purely a Rose show. On previous occasions when the National Rose Society has offered prizes for Roses in connection with the Royal Horticultural Society, there has been such over-crowding in the Drill Hall as was inconvenient to everyone. To prevent a recurrence of such a condition the Council this year resolved that apart from the Roses, no exhibit would be received except if it was shown for Certificate, and therefore there were no groups of plants.

THE ORCHID COMMITTEE recommended a Botanical Certificate and an Award of Merit to plants shown by Sir TREVOR LAWRENCE.

THE FLORAL COMMITTEE recommended a First-class Certificate to the Rev. W. WILKS' strain of Shirley Poppies; and Awards of Merit to a Pink, a Carnation, a Delphinium, a Rose, an *Astilbe*, a *Canna*, and a *Scopolendrium*.

THE FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit to a new Strawberry.

ROSES.—The competitive classes for Roses were well furnished with exhibits, and generally the quality was high, but it was noticed that some of the blooms had sustained injury by travelling, owing to the petals having been softened by the recent rains. The new Gold Medal H. P. Rose Ben Cant (see fig. 6, p. 13), was better shown by Messrs. B. CANT & SOSS than at Richmond 5 weeks previously.

The Roses staged in vases presented a very much more beautiful effect than those in boxes, and we hope the system will be extended. The only non-competitive group of Roses was one from Messrs. W. PATE & SOSS, Waltham Cross, to which a Gold Medal was awarded.

In the afternoon an interesting lecture was delivered by the Rev. GEO. HENSLOW, detailing the relations between the appearances of plants and the conditions in which they grow, and showing that the same general appearances were presented by widely different plants if grown under the same circumstances.

Floral Committee.

Present: W. Marshall, Esq.; and Messrs. CHAS. T. DUNEY, H. B. MAY, R. BEAN, H. SELF LEONARD, JOHN JENNINGS, J. F. McLEOD, W. HOWE, J. FRASER, C. DIXON, JAS. HUDSON, CHAS. E. PEARSON, H. J. JONES, CHAS. E. SHEA, W. P. THOMPSON, E. H. JENKINS, J. D. PAWLE, ED. MAWLEY, and C. J. SALTER.

MR. JAS. DOUGLAS, Edenside Nursery, Great Bookham, Surrey, exhibited cut flowers of Carnations and Pinks, amongst which we noticed the following:—Old Chelsea, white and purple-coloured Pink; Exile, a lovely rose-coloured Carnation; Pearl, white, very good form; Tabley, very deep crimson; Don Carlos, yellow ground, marked with pink; Cecilia, the large yellow-flowered variety, frequently mentioned in these pages, and some others.

Lilium elegans, variety Lady Polly, shown by Sir TREVOR LAWRENCE, Bart., Enford, Dorking (gr. Mr. BAIN), was rich yellow coloured, with a very few brown spots.

MESSRS. BARR & SOSS, King Street, Covent Garden, London, exhibited several good varieties of Delphinium, also *Coronilla rosea* alba.

MESSRS. KELWAY & SOSS, Langport, Somerset, showed some choice Delphiniums, including one named William Kelway, a double flower of a delicate native colour and a light shade of blue.

Several good varieties of Carnations were shown by Messrs. W. CURTISH & SOSS, one of which obtained an Award of Merit.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. W. NIEL), showed a plant in bloom of *Anaryllis proserpa*, a pale lilac-flowered species (Vot. of Thanks).

Border Carnation Joseph Lawrence, shown by Mr. Sheriff LAWRENCE, M.P., Kenley, Surrey (gr. Mr. J. BANNERMAN), is a good yellow ground variety, with reddish-purple marking in the form of stripes. A group of plants was shown in pots, and they were very well flowered.

MR. H. YOUNG, Pansy Nurseries, Chesnut, exhibited about a dozen pretty varieties of Pink, and several plants in pots. One of the varieties is noticed under Awards of Merit.

MESSRS. W. PATE & SOSS, Waltham Cross Nurseries, Herts, made a display of cut Roses on one of the side tables, and on one side of a central table. There were probably as many as one hundred varieties, and these included a large number of the decorative Tens and H. Tens. Messrs. PATE'S new Tea Rose *Baudica*, a distinct variety, colour pink and white, was represented by a large boxful of blooms; *Tennyson* (H.T.), a large pale bluish variety; *Blushing Bride* (H.T.), *Souvenir de Catherine Guillot*, white *Maman Cochet*, *Exquisite* (H.T.), *Empress Alexandra* of Russia, *Antoine Kivoire* (H.T.), *Callina*, a decorative Tea Rose, of very bright but rich rose colour, William Allan Richardson, *Madame Jules Grolez*, *Chloé P.P.*, bluish, very pretty; Mrs. Ed. Mawley, *Enchantress*, *Clara Waterer* (H.T.), pink and bronze colour; and *Madame Abel Gatenay*, were some of the best Roses in this very large group of cut blooms.

A plant was shown of the new Rose *Soleil d'Or* (see fig. 4), from a cross between *Persian Yellow* and H.P. *Antoine Ducher*. This new Rose, which is very distinct in colour, yellow, with orange shaded centre, was exhibited at the Temple Show, and awarded an Award of Merit. In habit of growth it is rather more rampant than is *Persian Yellow* (Gold Medal).

MESSRS. JAS. VEITCH & SONS, King's Road Nurseries, London, exhibited two dozen bunches of blooms of *Rose Queen Alexandra*, a variety obtained by crossing Turner's *Crimson Rambler* with *Rosa multiflora*

simplex. The inflorescence is much the same in character as those of *Crimson Rambler*, but the blooms are semi-double, some almost single, and rich rose coloured with whitish centre. In growth it is quite a Rambler.

MESSRS. VEITCH also showed a new single tree named *Lily*, from a cross between *R. macrantha* and the variety *Charles Lawson*. The blossoms are quite four inches across, and rich pink colour. Also fine spikes of *Delphinium Monument*, semi-double, good bold spike, and pretty mauve-coloured flowers; and *D. Strada*, semi-double, large, and very rich purple colour. Some inflorescences of *Isatis glauca* were very showy.

Awards.

Canna Miss Kate Gray.—This is a very fine variety of the *Orchid-flowered* section of *Canna*. It grows from 2 to 4 feet high, and has very large showy flowers, with broad petals of much substance, and brilliant scarlet in colour. There are yellow markings on the throat. Shown by Mr. H. J. JONES, Ryeport Nurseries, Hither Green, Lewisham (Award of Merit).

Carnation Maggie Hodgson.—An exceedingly deep crimson-coloured *Carnation* of the *Souvenir de la Malmaison* type, of large size and excellent form. *Calyx* non-splitting. Shown by Messrs. W. CURTISH & SOSS, Highgate Nurseries, London (Award of Merit).

Delphinium Dorothy Daint.—A single-flowered variety, more than 2 inches across, deep purple in colour, with creamy white centre. Shown by Messrs. KELWAY & SOSS, Langport, Somerset (Award of Merit).

Pink Mrs. H. Young.—This is a large Pink of pale rose colour, with deep purple hand around the centre. Shown by Mr. H. YOUNG, Pansy Nursery, Chesnut (Award of Merit).

Poppies, Shirley strain.—The Rev. W. WILKS, M.A., Shirley Vicarage, Croydon, exhibited two lovely bouquets of the beautiful Shirley Poppies; and the strain was awarded a First-class Certificate. The flowers shown were of large size, some pink and some white; all of them equally attractive.

Rose Bellefleur.—A semi-double Rose, 4 inches across, of the colour of *Paul's Carmine Pillar*. From Mr. GEO. PINCKE, Longworth Nurseries, Berks (Award of Merit).

Scopolendrium vulgare sagittato- cristatum.—This is a variety of the common *Scopolendrium*, with two crested lobes at the base of each flower, and another at point. Shown by Mr. C. T. DUNEY, H. Slia Road, Acton (Award of Merit).

Spirea astiboidea var. Silver Sheath.—The correct name of this plant is *Astilbe japonica* var. *Silver Sheath*. It is a first-class variety of the plant known as *Spirea astiboidea*, grows 3 feet high, and has very freely-branched inflorescence, with less dense spikes than the type, and a faint shade of pink. Shown by Mr. H. J. JONES (Award of Merit).

COMPETITIVE ROSES.

GENERAL CLASSES.

The 1st class for twenty-four trusses, distinct, was won by Messrs. B. CANT & SOSS, Colechester, with a collection of the following varieties. *Back row*: *Gustave Pignanneu*, *Caroline Testout*, *Ulrich Brunner*, *Madame de Watteville*, *Maurice Bernardin*, *Catherine Mermel*, *Helen Keller*, *Her Majesty*; *middle row*: *Marchioness of Downshire*, *Alfred Colomb*, *Maman Cochet*, *Ben Cant* (the new purple-crimson H.P.), *The Bride*, *Comtesse de Laire*, *Innocente Pirota*, *Comte de Rambaud*; *front row*: *Marie Verdier*, *White Lady*, A. K. Williams, *Madame Hoste*, *Lady Helen Stewart*, *Ethel Brownlow*, *Horace Vermet*, and *Bridesmaid*. Messrs. D. PAJOR & SON, Myland Nurseries, Colechester, were 2nd, and included very lovely specimens of *Maman Cochet*, and *Gustave Pignanneu*. There were two additional exhibits.

Eighteen Single Trusses, distinct.—MR. CHAS. TURNER, Royal Nurseries, Slough, won the 1st prize in this class from two other exhibitors, showing a collection of bright blooms of moderate size. The prettiest were *Maman Cochet*, Mrs. J. Grant, *Caroline Testout*, *Gustave Pignanneu*, *Marchal Niel*, *Prince Arthur*, *Ulster*, one of Messrs. DICKSON'S new Roses; and *Bessie Brown*, 2nd, Mr. GEO. PINCKE, Longworth, Berks, whose collection contrasted with that which obtained the 1st prize, owing to the number of H.P.'s in Mr. Turner's stand and of H.T.'s in that from Mr. Prince.

AMATEURS.

Eighteen distinct trusses.—The largest class open only to Amateurs, was won by O. G. ORRIS, Esq., West Beighold, Colechester, with the following varieties. *Back row*: *Maman Cochet*, very fine; *Bessie Brown*, a lovely blossom; *Francis Michelon*, *Her Majesty*, *Ulrich Brunner*, and Mrs. E. Mawley. *2nd row*: *Mar-*

chioness of Londonderry, Mrs. Jno. Laing, Mrs. R. G. S. Crawford, Marquise Litta, White Maman Cochet, and Madame de Watteville. *Front row*: Killarney, a new pink-flowering H.T.; Innocente Pirola, Cleopatra, The Bride, Souvenir de S. A. Prince, and Catherine Mermet. The Rev. J. H. PEMBERTON was 2nd, and there were two unsuccessful exhibitors.

Twelve single trusses.—There were seven exhibits of collections of twelve single trusses, and the 1st prize was won by J. HALSTEAD, Esq., Oak Lodge, Keigate. His selection was Caroline Testout, Etienne Levet, Marie Finger, Comte Raimband, A. K. Williams, the lovely lemon-coloured K. A. Victoria, Chas. Lefebvre,

to a collection of blooms of Marchioness of Londonderry, shown in very fine condition by J. BATEMAN, Esq., Rosevale, Archway Road, London, N. The Rev. F. PAGE ROBERTS, Halstead Rectory, Sevenoaks, won 2nd prize with his blooms of Mrs. K. G. Sharman Crawford. The varieties Caroline Testout and Mrs. Jno. Laing were also shown in this class.

TEAS AND NOISSETTES.
OPEN CLASSES.

The 1st prize for eighteen trusses, distinct, was won by Mr. GEO. PRINCE, Maman Cochet again showed up to much advantage, as did the good and useful variety Catherine Mermet. White Maman Cochet, Fridesmaid,

Catherine Mermet, &c. The Rev. F. R. BURNSIDE, Great Stanbridge Rectory, Rochford, Essex, was 2nd, and there were two other collections.

A class for six single trusses, not fewer than four varieties, was won by Miss BEATRICE H. LANGTON, Raynoid, Hendon, N.W., and she showed fine and very pretty specimens of Maman Cochet, White Maman Cochet, Madame Cusin, Comtesse de Nadailac, Sylph, and Fridesmaid. Of seven other exhibitors, the successful one for 2nd place was G. A. HARMON, Esq., Cambrian House, Burgess Hill.

New trusses of one variety.—The variety Maman Cochet was awarded 1st prize in this class, from Mr. O. G. OFFEN; and Innocente Pirola, from G. H. BAXTER, Esq., was placed 2nd.

Six Trusses of One Variety.—Maman Cochet was again awarded premier honours, from E. M. BETHUNE, Esq.; and Muriel Graham, a pretty tinted Rose, from the Rev. F. R. BURNSIDE, was 2nd.

GARDEN ROSES.

There were two excellent displays made in the class for thirty-six distinct varieties, not fewer than three trusses of each. The 1st prize was won by Messrs. PAUL & SONS, Old Nurseries, Ches-hunt. Particularly noticeable were Pink Roamer (Wichuriana), Leuchtstern, Killarney, Marquise de Salisbury, Lady Battersea, Ma Capucine, Crested Moss, William Allan Richardson, Paul's Caroline Pillar, and Rosa Mundi. The bunches were large, and most effectively put up, but too crowded. Messrs. FRANK CANN & Co., Braiswick Nursery, Colchester, were 2nd. Very striking in the stand were the bunches of R. unguiculata, a large single blush Rose, and R. Tumalona.

ROSES IN VASES.

There were four classes for Rose blooms in vases shown with long stems, and they had a very pretty effect. The 1st prize for nine distinct varieties, seven trusses of each, was won by Mr. GEO. PRINCE, and the collection was not to include any variety the National Rose Society regard as belonging to the garden section. Those shown were Kaiserin A. Victoria, Marquise Litta, Souvenir de S. A. Prince, Mrs. W. J. Grant, Fridesmaid, Fisher Holmes, Bessie Brown, Innocente Pirola and Madame Cusin, the flowers were beautifully arranged and set off by a backing of black velvet. 2nd, Messrs. B. CANN & SONS, whose group or tinted much deep colour, there being the varieties Duke of Wellington, General Jacquemont, Fisher Holmes, A. K. Williams, &c. Two other competitors were unsuccessful.

Six distinct varieties in bouquets.—This class was won by the Rev. J. H. PEMBERTON, who had a very pretty exhibit.

Teas and Noisettes.—An open class for six distinct varieties, seven trusses of each garden Rose exhibited, was won by Mr. GEO. PRINCE, his varieties being Maman Cochet, white Maman Cochet, Muriel Graham, Comtesse de Nadailac, Catherine Mermet, and Innocente Pirola, 2nd, Messrs. B. CANN & SONS.

Mr. O. G. OFFEN won a similar class open only to amateurs. His flowers looked very pretty in tall glass vases. The varieties were Souvenir de S. A. Prince, White Maman Cochet, Innocente Pirola, Anna Olivier, Madame Hoste, and Madame Cusin.

The Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), E. Ashworth, F. A. Reider, H. T. Pitt, J. Douglas, W. A. Binney, T. W. Bond, J. W. Potter, H. J. Chapman, H. A. Tracey, W. H. Young, J. G. Fowler, H. Ballantine, H. M. Pollett, and W. H. White.

Sir TREVOR LAWRENCE, Bart., Burford, sent several interesting things, one of which, Schomburgkia Thomsoniana, secured an Award of Merit. Schomburgkia Thomsoniana first made its appearance in a fine specimen exhibited by W. J. Thomson, Esq., Glyllbank, St. Helens, at the show held at Liverpool under the auspices of the Royal Horticultural Society in 1886; and it was the most interesting plant exhibited. The late Prof. Reichenbach described it in the *Gardener's Chronicle*, July 9, 1887. At that time no information was forthcoming as to its native habitat, but since then it has been stated that it grows on the Great Cayman, and possibly in some of the other West Indian Islands. The plant has, however, continued to be very rare, and its re-appearance at the Royal Horticultural Society records it as the most botanically interesting plant exhibited for the second time. The plant has hard, hollow stems, as in S. tuberosa, although both the plant and the inflorescence are smaller than in



FIG. 7.—ROSE "SUSANNE-MARIE ROBOCANACHI" (H.P.); BRIGHT ROSE COLOUR. (SEE P. 10.)

Clio, Souvenir de President Carnot, Alfred Colomb, La France, and Marchioness of Londonderry. The 2nd prize was won by F. WELLSLEY, Esq., Westfield, Woking (gr. Mr. J. Gilbert).

The smaller class for six blooms, distinct, was won by Mr. G. H. BAXTER, Hutton Park, Brentwood (gr. Mr. H. Holloway).

Nine single trusses of any variety of H.P., H.T., or H.B.—The 1st prize was won by five blooms of Her Majesty, shown by Mrs. HAYWOOD, Woodhatch Lodge, Keigate (gr. Mr. C. J. Salter); and the Rev. J. H. PEMBERTON, with the variety A. K. Williams, obtained 2nd prize.

Six trusses of any H.P., H.T., or H.B. Rose.—There was as many as thirteen exhibits in this class, and rather close competition. The 1st prize was awarded

Mrs. E. Mawley, and Madame Hoste were others in this collection that deserve mention. 2nd, Messrs. B. CANN & SONS, whose best blooms were Maman Cochet, Fridesmaid, and a very attractive blossom of Innocente Pirola.

AMATEURS.

O. G. OFFEN, Esq., won the class for eighteen trusses, not fewer than twelve varieties. There were beautiful blooms of Maman Cochet and white Maman Cochet, Madame Cusin, Comtesse de Nadailac, Marchal Niel, and Bride-maid.

Twelve single trusses in not fewer than nine vases. E. M. BETHUNE, Esq., Denne Park, Husham, Sussex, won 1st prize in this class, and showed a very large bloom of Mrs. Ed. Mawley, Maman Cochet, very pretty, also Messrs. W. Paul's Medea, a lemon-coloured Tea;

that species. The sepals and petals are pale yellow, with a tinge of purple on the reverse side. Lip whitish at the base and side lobes, the front lobe being of a bright purple colour. Sir TAYLOR LAWRENCE also showed *Rennettiana Buscoidesiana superba*, with the large lateral sepals of a rich rufous crimson, setting lighter towards the edges. *Cypripedium* *s.* *Wuertziannum* 'Barford variety,' *Solandra incarnatha superba*, a very fine and richly coloured form; and the very singular *Epipactis dentifera*, with a curiously formed greenish flower, borne on a long slender stem (Botanical Certificate).

Sir FREDERICK WEAN, Bart., Clare Lawn, East Sheen cr., Mr. W. H. Young, showed *Galettia Mendelii* abstersis, for which an Award of Merit had formerly been given. The plant here a three-flowered inflorescence, the blooms being clear white, with a scarcely perceptible bluish tint on the sepals and lip; also a splendidly open *Galettia Gaskelliana* alba, with nine flowers, for which a Cultural Commendation was given.

Mr. ED. KIRBY, Roxania Nursery, Bandon Hill, Croydon, showed a good example of the dwarf *Zoepelephium Scantlingii* (Promeris extrima), with eleven bright yellow flowers.

J. A. TOMBS, Esq., Stone Hall, Oxford, showed *Galettia Mossiae* and *C. lobata* Warner.

Fruit and Vegetable Committee.

President—Geo. Bunyard, Esq., Chairman, and Messrs. H. Esling, Jos. Child, W. Fair, S. Mortimer, A. Deau, W. Eyre, Geo. Kell, E. Beckell, A. Ward, Jas. Smith, Edgar S. Baker, H. Balderson, and Rev. W. Wilks.

MESSrs. LAMDIS BROS., Bedford, showed a large quantity of their new late fruiting strawberry, 'Climax,' a wedge-shaped fruit of large size and of a shining crimson hue, having the seeds embedded in the flesh. It was obtained by crossing Latest-of-All with Waterloo. An equal quantity of the new late variety 'Redgair,' the fruit of which is cockscomb-shaped, obtained from Latest-of-All crossed with Frogmore Late Pine was shown. It has a flavour reminiscent of British Queen, due to the influence of Frogmore Late Pine. In shape it is generally more wedge-shaped than central, and the colour is scarlet, the tip being of a light tint. Plants of both varieties were shown, which indicated great fruitfulness. A plant was likewise shown of the variety 'Fillsack,' a late fruiting variety, with conically shaped fruit, produced in great profusion. It has for its parent Royal Sovereign and Latest-of-All.

Mrs. ANTONIA, South Villa, Regent's Park cr., Mr. G. Kell, showed strawberry Waterloo of large size and perfect in every point (Cultural Commendation).

Mr. PETERS, gr. by R. P. SURGERS, Givons Grove, Leatherhead, showed a Strawberry = Waterloo crossed with Latest-of-All as plants lifted from the open ground. The first named was the seed parent.

MESSrs. BUNYARD & Co., Hursley, near Maidenhead, showed a dish of strawberry Latest-of-All, which consisted of extra large fruits.

Mr. G. WYLLIES, gr. to His Grace the Duke of Northumberland, Syon House, Brentford, showed Melon Victoria, *Sylbes* = Sutton's Epimée, *Sylbes* Melon, a nice-looking, netted green flesh variety, of the middle size.

Mr. Jas. Verrill, gr. to Lord BRYANBORO, Audley End, Suffolk, likewise showed a green fleshed variety of Melon. No award to Melons was made by the Committee.

Mr. R. SEWARD, gr. Buresfield, Walton on Thames, showed Pea obtained by crossing Perfection with William I. The pods were large and well filled, and of a dark green colour, as was likewise the seed.

Mr. E. Beckell, gr. to Lord ALDENHAM, Altham Hall, Elyshire, showed a new Pea Edwin Beckett, a very large podded variety, possessing nine and ten seeds in a pod (Cultural Commendation).

Awards of Merit.

R. P. SURGERS, Esq., Givons Grove Gardens, Leatherhead cr., Mr. PETERS, showed Strawberry Givons Late Prohibe, a fine large cockscomb-shaped fruit, of a rich crimson colour, but as regards the flavour we are unable to speak.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 29.—This was not a large meeting on this date, the months of June, July, and August being slack months so far as orchids go.

S. GRADLEY, Esq., Wadley Rectory cr., Mr. G. CYPHER, exhibited half a dozen good things. *Galettia Gaskelliana* var. *humboldtii* from this collection, was very fine, and received a First class Certificate. *Galettia*

Mendelii 'West Point var.' received an Award of Merit. It is a fine large flower, with pale native sepals and petals, the lip being similarly coloured with a few dark lines running through it, throat of lip very dark. *Galettia Mendelii* 'West Point var.' received an Award of Merit; it is a finely shaped flower with a richly coloured labellum. *Galettia Mossiae* var. *Arnoldiana* also received an Award of Merit; the same award going to *Odontoglossum crispum* West Point var., a flower of good shape and substance.

A. WARDEN, Esq., Haslingden cr., Mr. T. LOUTHOUSE, received a First class Certificate for *Cypripedium* *s.* *Currieri* x *Moraniana*, a good hybrid between the two above-mentioned parents.

Mr. A. J. KEENE, exhibited a good group of plants, comprising *Catleyas*, *Labias*, *Cypripediums*, &c. Bronze Medal, P. II.

GLOUCESTER AND CHELTENHAM ROYAL HORTICULTURAL.

JUNE 26.—The annual show of the county of this Society was held at the Montpellier Gardens under diminished patronage. The groups of flowering and foliage plants, arranged for effect on a space of 200 square feet, were worthy of a close study, both for arrangement and the variety and excellence of the products. In the class open to all England, Mr. J. CYPHER, of Cheltenham, holds the crown; Mr. VAUSE, of Lennington, taking 2nd place; and Messrs. PALMS & SHARPE taking 3rd. The prize for the amateur group was awarded to Mr. J. HORRIK, of Cowley Manor, Gloucestershire. Mr. CYPHER was also the leading exhibitor for stove or greenhouse plants (open, zonal *Pelargoniums*, group of magnificent *Orchids*, and a collection of herbaceous perennial cut flowers).

Mr. H. O. LOUIS, secured the amateur prize for stove or greenhouse plants, beating his neighbour of Cowley Manor, Colonel ROGERS, ex Mayor of Cheltenham, took several prizes, notably with a group of *Pelargoniums*, zonal *Pelargoniums*, and herbaceous perennial plants.

MESSrs. TOWNSEND & SONS, Worcester, took 1st in three classes for cut Roses; and Mr. COSMA JONES, of Gloucester, a well-known judge and ex' judge, a 2nd. The tasteful table decorations and bowls were a feature of the show.

Fruit made a tempting display, and Colonel ROGERS was successful with Grapes, Peaches, and Newberries; while Messrs. HALL & SON, placed on the tables some monster Strawberries, and secured a justly deserved 1st prize.

Vegetables.—In this section the Rev. G. COVELL nearly swept the board.

Miscellaneous.—Messrs. HALL & SON made a fine display of flowers, not for competition; and Mr. J. JACKSON showed a capital collection of fruit. Messrs. FEELER & MAYNARD also figure prominently among the prize winners. The show was regarded by competent judges as the best the Society has held for many years.

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

JUNE 27.—The monthly meeting of this Society was held at St. John's Parish Rooms on the above date; Mr. E. BRETHERTON occupied the chair. The paper for the evening was on the "Culture of Orchids," being the essay that obtained the prize kindly given by Mr. GREEN, Redland, and won by Mr. F. LEE, of Redland.

Mr. Lee mentioned the rapid strides which Orchid culture has made during the past few years, the large importations into this country, as well as the reasonable prices for which they can now be bought, causing many horticulturists to make them their special hobby. The lecturer gave a selection of the best varieties of *Cypripedium*, *Pendrobrum*, *Galettia*, *Odontoglossum*, and others to be grown, together with all cultural directions.

HANLEY HORTICULTURAL.

JULY 3, 4.—The exhibition in Hanley Park on the above dates was a magnificent one in all respects. Every section of the show was admirably filled, and in many classes the competition was very keen. Groups were superb both in the competitive and non-competitive sections; while fruit, with the exception of the white Grapes, was splendidly staged. Vegetables, too, considering the weather and the early date, were very nice. Pressure upon our space prevents our giving notes of any, except the most important classes in the open section. Needless to say, the growers of Stafford, Chester, Derby, and Salop, showed some splendid produce in all departments.

OPEN TO ALL GARDENS AND PLANTS.

The promoters of the Hanley Fete make a great feature of their groups, for which they offer handsome prizes. The principal class is for a group of plants,

in or out of bloom, arranged for effect on a space not exceeding 200 square feet. There were four competitors, of whom Mr. J. CYPHER, Cheltenham, was an easy 1st standard. The arrangement took the form of a central sides rose with a noble knot on the summit. From the knots, *Caladiums*, *Lilium Harrisii*, *Isotria*, *Crotons*, *Caladiums*, and Ferns. There were four corner motifs, each surmounted by a graceful Bamboo, and having *Caladiums*, *Odontoglossums*, *Aralias*, with Ferns and *Asparagus deltoicus*. Tall specimen *Crotons* and *Alumina elegans* were judiciously employed. Into the groups *Mosses* were judiciously placed. *Seriera depressa*. Mr. W. VAUSE, Lennington, was 2nd with his charming arrangement of the customary foliage plants, with *Anthuriums*, *Hydrangeas*, *Catleyas*, *Odontoglossums*, and other flowers. Mr. J. Read, gr. to the Earl of CAIRNARON, Reddy Park, was 3rd. This group lacked brilliancy.

In the class for a group of *Orchids*, arranged in a space of 100 square feet, Mr. J. CYPHER was placed 1st, with a splendid collection which included *Catleyas*, *Lelia tenebrosa*, *Sophronitis grandiflora*, *Miltonias*, *Oncidiums*, *Epipedium tricolor*, *Miltonia majas*, and others. Mr. W. STEVENS, gr. to W. THOMPSON, Esq., Walton Grange, Stone, Staffs, was 2nd, the group comprising splendidly grown *Odontoglossums*.

In the class for twelve plants, six to be in flower, Mr. J. CYPHER was easily 1st, with *Phaenocoma proliera* Barnesii, *Kentia*, *Leucocoma*, *C. Forsteriana*, *Stachis profusa*, *Cotton queen*, *Veronica*, *C. Martiana*, *Oenothera*, *Isora salicifolia*, *Bougainvillea glabra*, *Erica verticillata*, *Bothwelliana*, and *E. Cavendishiana*. Mr. W. VAUSE was 2nd.

The *Orchids* in the class for eight distinct were splendid. The premier prize went to Mr. J. CYPHER, who staged *Catleya rigas*, *C. Mossiae*, *Brasavola* *pubescens*, *Cypripedium Lawrenceanum*, *C. superbum*, *Odontoglossum crispum*, *O. Cordatum*, and *Epipedium pistillatorum*. Messrs. DESKINSON & SONS, Newcastle, Staffs, were 2nd.

Mr. J. CYPHER was 1st for six *Palms* distinct, with grand examples of *Kentia Behmoraiana*, *Lantania borbonica*, and *Thrinax elegans*, as his best. Mr. W. VAUSE was 2nd.

ROSES.

Seven classes were scheduled in this section, and considering that the opening day immediately preceded the Temple Show of the National Rose Society, the display was excellent. The principal class was for seventy-two distinct single bushes, and the premier place was taken by Messrs. ALEX. DICKSON & SONS, Newboulds, whose best blooms were Mrs. W. J. GARD, Comtesse de Salabille, Ernest Metz, Muriel Graham, Mildred Grant, Bessie Brown, *Archives*, *Souvenir d'Elisabeth*, *Archives*, *Archives*, and *The Bride*. Messrs. J. TOWNSEND & SONS, Worcester, were 2nd; and Messrs. HARKNESS & SONS, Redale, followed very closely.

In the class for forty-eight distinct, the KING'S ACBE NURSERY Co., LTD., Hereford, was placed 1st, and a moderately good stand, in which were very fine *Mardi-grasse* of *Indorum*, *Nyxites*, Mrs. W. J. GARD, Mildred NIEL, Duke of Teck, and *Souvenir d'Elisabeth*, *Vardon*; Mr. FRIEFTINGHAM, Boston, Notts, was 2nd; and Messrs. HARKNESS & SONS, 3rd.

The class for thirty-six bushes resulted in a win for Messrs. A. DICKSON & SONS, who were 1st with flowers that showed signs of the weather. Messrs. HARKNESS & SONS were a good 2nd, and the KING'S ACBE NURSERY Co., LTD., 3rd.

Messrs. A. DICKSON & SONS were 1st for twelve new Roses, distinct, introduced since 1891, or seedlings, with several unnamed light coloured varieties. Mr. FRIEFTINGHAM was 2nd.

For twelve distinct varieties Messrs. A. DICKSON & SONS were easily 1st, with *Gustave Pigmanent*, *A. Lind* cell, *Fister*, *Bessie Brown*, *Florence Pemberton*, *Tom Wood*, *Mildred Grant*, *Nyxites*, Mrs. W. J. GARD, and *Glas Letehyre*. Mr. FRIEFTINGHAM was 2nd.

There was only one class for Teas, this being for twelve distinct, three blooms of each. Messrs. J. TOWNSEND & SONS were the only exhibitors, and showed Ernest Metz, *The Bride*, *Francesca Kruger*, *Marie Van Houfte*, *Marian Cochet*, and *Innocente Paula*.

For twelve blooms of any one variety Messrs. J. TOWNSEND & SONS were 1st with *Bessie Brown*; and Messrs. A. DICKSON & SONS 2nd, with *Mildred Grant*.

NEW CENTURY CLASS—BRITISH GARDEN PRODUCE.

This general class called for nine dishes of fruit, not fewer than six kinds; nine dishes of vegetables, not less than six kinds; nine plants in pots not exceeding 6 inches in diameter, with cut flowers to the taste of the exhibitor. The three points were quality, harmonious blending of colour, and general effect. A table space 15 feet by 1 feet was allowed. There were three competitors, but Mr. J. McINROE, through inadvertently including one dish of fruit over the requisite number was disqualified. He had a splendid exhibit, and a special prize equal in value to the 1st will be awarded. The premier award went to the Earl of HARKINGTON, Ely, Cambs. The 2nd, Mr. J. H. Dymond, who scored 62 points out of a possible 121. He showed Grapes Foster's Seedling, and Black Haulburg, Peaches Prince of Wales and Dymond, Apple Lady

GARDEN OR DECORATIVE ROSES.

The exhibits of this type of Rose, which includes more variation than any of the types, become more attractive each year. So much attention has been given to the raising of brilliant Rambler, Pillar Roses, single flowered, and Polyantha Roses, that freedom to flower and brilliance of colour characterise almost all of them, and they offer greater variety of colour also. The best exhibit of—

Thirty-six distinct varieties on Thursday were shown by Messrs. PAUL & SONS, The Old Nurseries, Chesham, and they staged a magnificent display, in which the following varieties were conspicuously effective. Madame Pernet Ducher, Dawn (a lovely H. T. rose, pink in colour), R. macrantha, Grass, an Tepitz, Camoens, R. Inida plena, Lady Battersea (richly coloured H. T. Rose), Madame A. Clotuyan, Old Red Danusk, Madame P. Cochet, Reine Olga de Wurtemberg, R. rugosa atropurpurea, Wallflower, Jules de Mersant (Moss), &c. Messrs. COCHRAN & SONS were 2nd, and had a very slow display, inclusive of a considerable variety of types. There were three exhibitors in the class, and the remaining one, which was disqualified, owing to an exhibition Tea Rose having been inadvertently included, would possibly have been 1st, but for the mistake.

Eighteen distinct varieties—There were three exhibitors in this class, and the 1st prize was won by Mr. GEO. PRINCE, who had grand bouquets of the following showy varieties: W. A. Richardson, Gustave Regis, Killarney, Allister Stella Gray, R. Moschata alba, Turner's Crimson Rambler, Papillon, Claire Jacquinet, White Provence, Souvenir de Catherine Guillot, Rambour, Climbing White Pol, &c. 2nd, Messrs. FRANK CANT & Co., and 3rd, Mr. CHARLES TURNER.

PREMIER BLOOMS.

The Silver Medals for the three premier blooms in the Nurserymen's Classes were awarded as follows:—For the best H. P., a very fine bloom of Mrs. Jno. Laing, shown by Messrs. D. & W. CROFT, Dundee. For the best H. T., Mildred Grant, shown by Messrs. A. DICKSON & SONS; and the best T. or N. Souvenir d'Elise Vardon, shown by Mr. MATTHEW.

OPEN CLASSES.

OPEN TO ALL NURSERYMEN AND AMATEURS.

Class 22—Twelve blooms of Hybrid Teas, distinct varieties. Six competitors staged in this class, Messrs. ALEX. DICKSON & SONS, Newtownards, Co. Down, winning with a good stand; Caroline Testout, Comte de Cadolun, Mildred Grant, Mrs. W. J. Grant, Marquise Litta, and Lady Mary Fitzwilliam, were the best flowers. 2nd, Mr. H. P. DICKSON, Royal Nurseries, Belfast; 3rd, Messrs. D. PRIOR & SON, Colchester.

Twelve blooms of any White or Yellow Rose.—The best in this class proved to be the variety Bessie Brown, which has been shown well this season. These blooms were from Messrs. D. PRIOR & SONS; 2nd, Comtesse de Nardaille, from Messrs. B. R. CANT & SONS, and 3rd, Marie Van Houfte, from Mr. JOHN MATTHEW. There were fifteen entries in this class, but only ten exhibited.

Twelve blooms of any light or dark crimson Rose.—In this class the 1st prize was won by the variety A. K. Williams, shown by Messrs. B. R. CANT & SONS; 2nd, Captain Hayward, from Messrs. J. TOWNSEND & SONS; 3rd, Duke of Edinburgh, from Messrs. D. & W. CROFT.

Twelve Blooms of any light-pink or rose-coloured Rose.—The 1st prize in this class was awarded to excellent blooms of Her Majesty shown by Messrs. G. and W. H. Burch, Peterborough; 2nd, Her Majesty from Messrs. PERKINS & SONS, Coventry; and 3rd, Caroline Testout from Mr. HUGH GIBSON, Royal Nurseries, Belfast.

Twelve blooms of any Tea or Noisette.—There were as many as seventeen exhibitors who entered in this class, but not all of these put in an appearance. Excellent blooms of the variety Mrs. Edward Mawley gained 1st prize, the dozen blooms being shown by Messrs. ALEX. DICKSON & SONS; 2nd, the beautiful variety Maman Cochet, from Messrs. HALEKNESS & SONS; and 3rd, the same, from Mr. GEO. PRINCE.

Class 23—Nine blooms of any new Rose. A beautiful stand of the variety Mildred Grant won for Messrs. ALEX. DICKSON & SONS, Newtownards, Ireland, the 1st prize, and the National Rose Society's Silver Medal for the best Hybrid Tea exhibited by a nurseryman, a beautifully-formed, bluish-tinted Rose; 2nd, F. CANT & Co., Colchester, with Bessie Brown; 3rd, Messrs. B. CANT & SONS, with Papa Lambert.

The next class for twelve blooms, distinct varieties of Roses, offered for the first time in English nurserymen's lists in the spring of 1898, and subsequently found Messrs. A. DICKSON & SONS again to the front, with the following: Mamie, Lady Myra Beanchere, Robt. Scott, Mildred Grant, Bessie Brown, and Ulster,

among the best; 2nd, Messrs. PERKINS & SONS, Park Nurseries, Coventry, Mrs. E. Mawley, Exquisite, Ulster, Mrs. E. Garrett, and Bessie Brown, being the best in their stand; 3rd, F. CANT & Co., Colchester, a bloom of Killarney in this stand being very good.

GOLD MEDAL ROSES.

In class 20, for new seedling Roses, or distinct sports, there were two Gold Medals awarded. One of these was to the fine pink-flowered Rambler Rose, from Messrs. JAS. VEITCH & SONS, described in our report of the Royal Horticultural Society at the Drill Hall, on Tuesday last (see p. 10). It is from a cross between Turner's Crimson Rambler and R. multiflora simplex. The other variety awarded a Gold Medal was the new Tea Rose, Mrs. B. R. CANT, shown last year, and again this, by Messrs. B. R. CANT & SONS. It is a fine Teascented variety of rich rose colour, and possessing broad, good petals.

AMATEURS.
MIXED ROSES.

Speaking generally, it can be said of the amateur's Roses they were in not a few instances deficient both in size and colour. Those who grow on light lands affected by the drought were the greatest sufferers in this respect; some residing in parts of the country where there had been a greater rainfall were able to show fresher and brighter blooms, though large size appeared to be the exception rather than the rule.

The class for 25 Blooms, distinct varieties, was entitled the Amateur's Champion class—There were four entries. Mr. E. B. LINDSELL, Bearton, Herts, was placed 1st. His blooms were clean and bright, but certainly below size. Chief among them were Her Majesty, Maman Cochet, Earl Duferin, Marie Baumann, Prince Arthur, Innocente Pirola (T.), A. K. Williams, Comtesse de Nardaille, Madame de Watterville, Madame Cusin (T.), Merveille de Lyon, Dupuy Jamin, Bessie Brown (H. T.), Mrs. Mawley (T.), S. de Elise Vardon (T.), Marné Gradane, Mrs. J. Laing, The Bride, and Helen Keller. 2nd, Rev. J. H. PEMBERTON, Havering-atte-Bower, whose blooms were somewhat uneven in size. Chief among them were Ulrich Brunner, Caroline Testout (H. T.), Marchioness of Londonderry, Francois Michelon, Kaiserin Augusta Victoria (T.), Auguste Rigodard, Helen Keller, Xavia Orbea, Her Majesty, A. K. Williams, Comte Rainband, Mrs. W. J. Grant, Bessie Brown, Gen. Jacqueminot, Laurence Allan, Souvenir d'Elise, Mrs. Sharran Crawford, &c. 3rd, Mrs. A. SLAUGHTER, Jarvis Villa, Steyning.

The class for 10 Blooms, distinct varieties—There were six entries, and the competition was somewhat close, and pointing had to be resorted to, and considerable time was expended in doing so. Eventually Mr. W. BOWYER, Duffield Road, Derby, was placed 1st with small but bright blooms of Comtesse de Nardaille (T.), Madame Eugene Verdier, Gustave Piganeau, A. K. Williams, White Maman Cochet (T.), Auguste Rigodard, Medea (T.), Caroline Testout, Kaiserin A. Victoria (T.), Niphotos (T.), Horace Vermet, Madame C. Ramey (T.), Mrs. W. J. Grant, Madame G. Luizet, Innocente Pirola (T.), &c.; 2nd, Mr. GOSWAY JONES, Hunclecliffe, Gloucester, whose leading blooms were A. K. Williams, Maman Cochet, Mrs. W. J. Grant, Marchioness of Londonderry, Innocente Pirola (T.), Niphotos (T.), Bessie Brown, Caroline Kuster, Medea, Horace Vermet, S. de President Carnot (T.), and Souvenir de S. A. Prince; 3rd, A. TATE, Esq., Barnside, Leatherhead.

The next class was also for twenty-four Blooms, in which the Rev. J. H. PEMBERTON Prize was offered, and was open to all Landowners.—In this were four entries, and here, as in the previous class, the competition was very close, and again pointing was called into requisition; with the result that the 1st prize was awarded to the Rev. J. H. PEMBERTON, who had bright, though generally small flowers of Her Majesty, Comte Rainband, Mrs. J. Laing, Francois Michelon, Ulrich Brunner, Bessie Brown, A. K. Williams, Comtesse de Nardaille, Helen Keller, White Maman Cochet, Mrs. Sharran Crawford, Mrs. W. J. Grant, K. A. Victoria, Madame Hoste, Susanna M. Rodocanachi, &c. 2nd, Mr. E. B. LINDSELL; 3rd, Mr. O. G. OXFORD.

Twelve distinct varieties, three blooms of each.—Here there were five entries. Mr. E. B. LINDSELL was awarded the 1st prize, with good blooms of La France, Bessie Brown, Mrs. J. Laing, Maman Cochet (T.), Her Majesty, Madame Cusin (T.), K. A. Victoria (T.), Madame G. Luizet, A. K. Williams, Innocente Pirola (T.), Madame de Watterville (T.), and Ulrich Brunner; the Rev. J. H. PEMBERTON was placed 2nd, his leading blooms being Mrs. W. J. Grant, Marchioness of Londonderry, Her Majesty, Madame Hoste, Caroline Testout, Mrs. J. Laing, A. K. Williams, and K. A. Victoria; 3rd, Mrs. HAYWOOD, Woodhatch, Reigate.

Twelve blooms of any Rose, except Tea or Noisette, and there were five competitors. The Rev. J. H. PEMBERTON was placed 1st, with fairly good blooms of Her Majesty.

RESTRICTED CLASSES.

The following classes were only open to amateur growers of fewer than 2,000 plants. The principal class, 31, was for twenty-four blooms distinct, and there were three entries. Mr. E. BETHUNE, Denne Park, Horsham, was placed 1st, with somewhat uneven blooms, chief among them Mrs. J. Laing, Alfred Colomb, Madame G. Luizet, Maman Cochet, Bessie Brown, Ulrich Brunner, Bridesmaid, Madame Cusin, Catherine Mermet, Fisher Hollandes, Margaret Dickson, La France, Comtesse de Nardaille, Caroline Testout, The Bride, &c.; 2nd, Mr. A. SLAUGHTER, Steyning, whose best flowers were Mrs. J. Laing, Maman Cochet, K. A. Victoria, Margaret Dickson, Thos. Mills, Marie Verber, Killarney, Marie Kady, Medea, Ethel Brownlow, &c.; 3rd, Mr. W. C. ROMANIE, Old Windsor.

Class 31 was for sixteen blooms distinct, and I there were three entries. Mr. R. FOLEY HOBBS, Thorncroft, Worcester, was 1st with Her Majesty, K. A. Victoria, A. K. Williams, Marchal Niel, La France, Bessie Brown, Caroline Testout, Souvenir de S. A. Prince, white Maman Cochet, Killarney, Horace Vermet, Innocente Pirola, White Lady, Souvenir d'un Ami, Medea, &c.; 2nd, Mr. E. MAWLEY, Rosebank, Berkhamstead, who had a fine bloom of Marchal Niel, Mrs. John Laing, Ulrich Brunner, Marquise Litta, Marchioness of Downshire, E. Lovet, Madame Jules Finger, &c.; 3rd, Mr. R. E. WEST, Wray Park, Reigate. The blooms in the 2nd and 3rd stands were decidedly uneven.

In the class for eight distinct varieties, three blooms of each, there were six competitors. Mr. E. M. BETHUNE was 1st with medium-sized blooms of Maman Cochet, Madame Cusin, The Bride, Ulrich Brunner, K. A. Victoria, Catherine Mermet, Camille Bernardin, and Madame G. Luizet; 2nd, Mr. R. F. HOBBS.

Class 33 was for nine blooms of any Rose, except Tea or Noisettes, and there were five competitors; the 1st prize falling to Mr. R. F. HOBBS with Her Majesty, in very good character, Mr. F. W. TATE, HALL, Crookleigh, Morecombe, with Bessie Brown.

The two classes which follow were open only to growers of not fewer than 100 plants, and the leading class was for twelve blooms, distinct, the 1st prize falling to Miss BEATRICE H. LANGTON, Raynham, Headon, who had a very good dozen in Gustave Piganeau, Caroline Testout, Captain Hayward, La France, Mrs. J. Laing, K. A. Victoria, Mrs. W. J. Grant, Maman Cochet, Bridesmaid, Gen. Jacqueminot, Mrs. S. Crawford, and Horace Vermet; 2nd, Mr. W. J. PRINCE, Beeston, Notts; his best blooms were Horace Vermet, Bessie Brown, Mrs. W. J. Grant, Margaret Dickson, Marquise Litta, K. Ang Victoria, &c.; 3rd, Mr. JOHN BATEMAN, Archway Road. There were nineteen competitors.

In a class for six blooms of any one variety, not T. or N., there were nine competitors. Mr. M. WHITTLE, Belgrave, Leicester, was placed 1st, with capital blooms of Her Majesty; Mr. S. MOULTON, Bank Street, Leicester, was 2nd, with the same.

The three classes following were open only to growers of fewer than 500 plants. The leading Class 36, was for nine blooms, and there were sixteen entries. The 1st prize was awarded to Mrs. E. A. MOUTZEN, who had bright, clean, even blooms of Comte de Rainband, white Maman Cochet, Mrs. J. Laing, Innocente Pirola, Dupuy Jamin, and the Hon. E. Gifford. Mr. R. W. BOWYER, Hertford Heath, was 2nd; he had smaller, but charming blooms of Bessie Brown, Horace Vermet, Caroline Testout, Mrs. John Laing, Ulrich Brunner, Madame Cochet, Comtesse de Turaine. 3rd, Mrs. TIMES, Bedford Road, Hitchin.

Class 37 was for six blooms, distinct varieties. Mr. H. H. GIFFORD, Edensor, Sutton, was placed 1st out of fourteen competitors.

Class 38 was for six blooms of any one variety other than T. and N. Mr. G. A. HAXWOOD, Burgess Hill, was 1st, with Her Majesty; Mr. H. H. GIFFORD, Edensor, Sutton, was 2nd, with Mrs. John Laing; Mr. R. W. BOWYER was 3rd, with Caroline Testout. There were fourteen exhibitors.

EXTRA CLASSES.

In Class 39, for twelve blooms, distinct, Mr. C. J. GRADIANE's Challenge Cup was competed for, and there were fourteen competitors. The 1st prize was awarded to Mr. W. KINGSROX, Waterloo Road, Bedford, who had small but bright and well-developed blooms of Her Majesty, A. K. Williams, Marchioness of Londonderry, Charles Darwin, White Maman Cochet, Duke of Teck, Mrs. J. Laing, S. de President Carnot, Caroline Kuster,

and Prince Arthur, Mr. T. DENNISON, Handsworth Wood, Birmingham, was 2nd.

New Roses—The best six blooms of new Roses came from the Rev. J. H. PEMBERTON, who had Shandon, Bessie Brown, Killarney, Tennyson, Lady Mary Curry, and Ards Rover. Mr. F. W. TATTERSALL was 2nd, he had Mrs. E. Mawley, Tennyson, Ulster, Bessie Brown, Gladys Harkness, and Killarney.

MAIDEN EXHIBITORS.

Class 4 was for six blooms for amateurs who had joined the Society since the last exhibition. Mr. C. J. PAUL, Edfield, was an excellent 1st; and Mr. T. H. COOKE, Colechester, 2nd.

METROPOLITAN CLASSES.

Class 5 was for six blooms grown within 5 miles of Charing Cross, and here there was a good competition. Mr. E. R. SMITH, Mus-well Hill, was 1st, with very good blooms of popular H.P.'s; and Miss BEATRICE H. LANSTON, Hendon, 2nd.

TEA AND NOISLETTE SECTION.

Some very beautiful blooms were staged in the following classes, but speaking generally a thinness of flower was discernible, and in several the stormy weather of the past few days, rather detracted from the beauty of the flowers.

Class 4.—Eighteen Blooms distinct varieties. Trophy Class—Four exhibits were staged, O. G. ORPEN, Esq., West Fergel-ht, Colechester, coming 1st with a very good stand, comprising Maman Cochet, Mrs. E. Mawley, Cleopatra, The Bride, Ernest Metz, White Maman Cochet, Incoente Piroda, Souvenir d'Elise Vardon, Bridesmaid, Marcelle Niel, Catherine Mermet, Madame Cusin, Madame de Watteville, Madame Cusin, Marie Graham, Souvenir de S. A. Pimou, Jean Pouchet and sylvia. The Silver Medal for the best Tea or Noislette was awarded to White Maman Cochet in this stand. A. H. GRAY, Esq., Beahan, Newbridge, Rath, was a good 2nd with a very clean stand of flowers of less worth, 2nd, COSWAY JONES, Esq., Hinchinbrooke, Clonsilla.

Tea and Noislette Blooms, distinct varieties—Six good stands were staged, ALFRED TAYLOR, Esq., Downside, Leatherhead, gaining the premier position, his best flowers were Madame Cusin, Miss Ethel Brownlow, The Bride, and Souvenir d'Elise. 2nd, A. H. GRAY, Esq., 3rd, F. W. FLIGHT, Esq., Tayford.

Some beautiful blooms were staged in the next class, that for eight distinct varieties, three blooms of each. 1st, A. H. GRAY, Esq., his Maman Cochet, Confesse de Nadailae, Catherine Mermet, and Marcelle Niel being extra good. 2nd, O. G. ORPEN, Esq., 3rd, Mrs. F. W. CAMPION, Trumpets Hill, Reigate.

For nine blooms of any one variety, O. G. ORPEN, Esq., was 1st, with White Maman Cochet. 2nd, A. H. GRAY, Esq., with Maman Cochet (very good); 3rd, E. M. BETHUNE, Esq., Hoar-ham, with the same variety.

OPEN ONLY TO GROWERS OF FEWER THAN 500 PLANTS OF TEAS AND NOISSETTES.

Trophy Blooms, distinct varieties—Four exhibitors, the Rev. F. PAGE ROBERTS, Halstead Rectory, Sevenoaks, coming 1st, his best blooms were Souvenir d'Elise Vardon, Confesse de Nadailae, Madame de Watteville, Medea, and Maman Cochet; 2nd, the Rev. R. POWLEY, Upton, Sandonmore, Warrimster; 3rd, F. WELFESTER, Esq., Westfield, Woking.

In the succeeding class for nine blooms, seven exhibitors competed, the 1st prize going to R. FOLEY HOBBS, Esq., Thornloe, Worcester, his Souvenir d'And, Empress Alexandra of Russia, Cleopatra, Mrs. E. Mawley, White Maman Cochet, and Marie Van Bouille, being very good; 2nd, Miss H. H. LANSTON, Raymed, Hendon, N.W.; 3rd, MARION WHITTLE, Esq., Belgrave, Leicester.

Thirteen stands of six blooms of any one variety were staged, the 1st prize going to COSWAY JONES, Esq., for "The Bride"; 2nd, R. F. HOBBS, Esq.; 3rd, Mrs. E. HOBBS, Park House, Reigate.

OPEN ONLY TO GROWERS OF FEWER THAN 200 PLANTS OF TEAS AND NOISSETTES.

The small growers came out well, thirteen competitors staging in the leading class for nine distinct blooms. 1st, W. UPHON, Esq., 16, Clarendon Street, Belgrave, Leicester; 2nd, G. H. BAXTER, Esq., Hutton Park, Brentwood; 3rd, F. W. TATTERSALL, Esq., Crookleigh, Morecambe. Nine exhibitors staged six blooms of one variety in this section, the 1st prize going to A. MUNT, Esq., Hedgerley, Slough; 2nd, Mr. MOTTES, Hitchin.

Class 5 was devoted to amateurs who have never won a prize at an exhibition of the N.R.S., and eight credit-

able stands were in competition, the 1st prize going to T. B. GABRIEL, Esq., Elmstead, Woking; 2nd, W. R. HAMMOND, Esq., Burgess Hill, Sussex.

ROSES IN VASES.

New distinct varieties, five Blooms of each—Only two exhibitors competed in this class, the 1st prize being easily won by H. V. MACHIN, Esq., Gateford Hill, Work-up; 2nd, Mrs. F. W. CAMPION.

Six distinct varieties of Teas and Noisettes, seven Blooms of each—This class brought four competitors, the 1st prize going to O. G. ORPEN, Esq., for six handsome vases of blooms, Maman Cochet, Madame Cusin, and Madame de Watteville being very fine; 2nd, A. H. GRAY, Esq.; 3rd, Miss B. H. LANSTON.

DECORATIVE CLASSES.

A bowl of Roses lightly arranged with Rose-foilage only, not more than thirty-six blooms to be used, but small buds may be left on the added foliage. In this class, Mrs. LEWIS PAWLE was 1st among three competitors, with a bold stand of one variety, apparently Caroline Testout; 2nd, Mrs. O. G. ORPEN.

The two next classes were open to ladies only. A decoration of cut Roses for dinner-table, arranged with any cut foliage, Ferns, or grasses, on a space 3 ft. by 3 ft. Nine exhibitors competed, some very pretty arrangements being set up.

time Guanois-sau, Reine Olga, Macrantha, Crimson Rambler, W. A. Richardson, Honore, Gustave Reus, Marquise Balbrano, The Garland, Hobe's Lapp, Etrole d'Or, Revo d'Or, Anna Marie Montfray, Rosa Inula, Perle d'Or, and Gloire Lyonnaise; 2nd, H. V. MACHIN, Esq.; 3rd, Mrs. F. W. CAMPION; both of the last exhibitors also staging well.

With twelve bunches, Mrs. A. F. PERKINS, Oak Dene, Holne-wald, Surrey, was 1st, Marquis of Salisbury, and Paul's Surtaine Pallay, being very effective; 2nd, Mrs. DOROTHY A. ST-SHELD, Spidhaust, Trimbridge Wells; 3rd, Miss BEATRICE LANSTON.

Class 57—Six vases of Sweet Briar Roses in six distinct varieties. The 1st prize was well won by Mrs. F. W. CAMPION, and comprised the following varieties:—Anne of Giersten, Jennie Deans, Lucy Brittain, Julia Mannerling, Lady Penzance, and Amy Robsart. A very pretty exhibit. 2nd, O. G. ORPEN, Esq.

PREMIER BLOOMS.

The Silver Medals in the amateurs' classes were awarded to Her Majesty, shown by FOLEY HOBBS, Esq., as being the best Rose, other than H.T.T. or N., to Bessie Brown, shown by G. MOTTES, Esq., Hitchin as the best Hybrid Tea; and for a magnificent bloom of Maman Cochet, shown by Mr. O. G. ORPEN, as the best Tea Rose.

NON COMPETITIVE EXHIBITS.

Mr. W. SPOONER, Arthur's Bridge Nursery, Woking, showed a group of cut Roses, the three varieties, Her Majesty, Victoria, and The Bride being in greatest quantity. Bunches of the decorative section of Tea Roses were pretty. (Silver Medal.)

Messrs. GEORGE JACKMAN & SON made a very fine display of cut Roses, showing H.P.'s and T's and H.T.'s in great variety in boxes, also a fine background of decorative Roses in vases, with Gypsophila between them. They made a very fine effect. (Silver Gold Medal.)

Mr. J. FISCHER showed a wire archway suitable for Roses, also permanent labels for Roses, samples of the Anne Rose Bloom Protector.

Messrs. HUGH LOW, & Co., Bush Hill Park Nurseries, Enfield, exhibited a collection of cut blooms in boxes, which represented all the sections of exhibition varieties. The blooms were very fresh and of excellent colour. (Silver Medal.)

Messrs. GEO. BUNYARD & CO., Royal Nurseries, Mandstone, showed garden Roses in fine condition and a large number of varieties. H.P.'s and Teas in boxes were also of commendable quality. (Silver Medal.)

Messrs. JNO. LANG & SONS, The Nurseries, Forest Hill, London, S.E., showed some very large blooms of H.P.'s, the variety Mrs. John Lang being represented in quantity. The exhibit also included some garden varieties. (Silver Gold Medal.)

Messrs. FRED & SONS, Rompell Park Nurseries, Newwood, London, had an exhibit of H.P.'s, Teas, and H.T.'s, the decorative Teas being very pretty. (Silver Medal.)

Messrs. JAS. VITCH & SONS, Royal Exotic Nurseries, Kings Road, Chelsea, exhibited bunches of their new pink coloured Rambler named Queen Alexandra, as described in our report of Tuesday's show at the Drill Hall, and which was represented in the bouquet presented to Her Queen on this occasion.



FIG. 8.—THE NEW NAME—ROSE-BLOOM PROTECTOR.

PROTECTING ROSE BLOOMS.

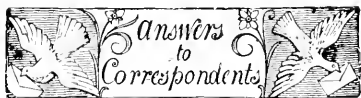
Those who cultivate Roses for exhibition, as well as for the adornment of their gardens and homes, are often compelled to use some kind of protection in order that the flowers may not be injured by wind or rain during the time they are developing. If this matter be not attended to carefully, the flowers lose much of their attractiveness, and the petals are disfigured, consequently they are less likely to secure honours on the exhibition table. The need for this protection is, of course, greater in some seasons than others, but British weather is proverbially true to its reputation for inconstancy, and every Rose grower knows this fact only too well. We have, therefore, pleasure in illustrating in fig. 8 a new style of protector for Roses and other flowers, which has been invented by Mr. R. E. West, of Reigate, Surrey, well known to be a successful exhibitor. The covering material is calico, and the angle at which the protector is made is said to

Mrs. O. G. ORPEN was awarded the 1st prize for a low arrangement of single-white Roses (R. Himalaya) with a bush-tint, a few sprays of Rose-foilage only being added, a delicate, but not over light arrangement, and rather too devoid of colour for the dinner table. 2nd, Mrs. ARTHUR CANT, Reed Hall, Colechester, with an arrangement of the small Perle d'Or and Cecil Brunner. 3rd, Mrs. LUCAS C. FRANKS, Bardsmill, Reigate. In this arrangement a few colours of Tea Roses only were used with excellent effect, with smilax trails on the tables. This was preferred by many to the two preceding exhibits, and was decidedly very effective.

Class 6 was for a vase of cut Roses, lightly arranged with any cut foliage, Ferns, or grasses. Mrs. PAWLE was 1st, with long sprays of Asparagus Sprengeri, and the bright pink Mrs. W. J. Grant Rose. 2nd, Mrs. MAWLEY, Rosebank, Berkhamstead; 3rd, Mrs. ARTHUR CANT.

Garden or decorative Roses, to be arranged so as to show as far as possible the foliage and habit of growth of each variety, eighteen distinct varieties, not fewer than three bunches of each. Four exhibitors staged in this class, the bright bunches of flowers forming a good display. ALFRED TAYLOR, Esq., Leatherhead, came 1st, with Gloire de Rosa memo, Aster Stella Gray, Angus-

render it waterproof, as the most severe rain is found to run off at the edge rather than through the material. The height may be fixed instantly by a galvanised steel spring, and by means of a square socket and a square stick, similar to that shown in the photograph, a steel spring secures the amount of rigidity that is essential to keep the protector in position during high winds. It is durable, portable, and very light, and is said to withstand winds better than any existing protector. These matters, however, may easily be tested by Rose growers themselves, who, we doubt not, may obtain particulars from Mr. West.



CARNATION FLOWERS OF TWO DIFFERENT COLOURS ON ONE PLANT: W. P. B. This form of reversion is by no means uncommon in the Carnation; the reversion revealing itself variously. The same thing occurs in Chrysanthemums and other plants of composite origin, and the "sport" remains constant for a great number of years.

GALLS ON HAZEL: No Note. These out-growths are caused by the puncture of an insect, which sets up irritation and over growth, and provides a nest for the eggs and food for the young grubs when they appear. If you cut one open, you will find numerous flies therein.

GRAPES DISEASED: *Anxious, A. H., J. M. S., G. M., Enquirer, and others.* The fruit is affected by the spot fungus, *Gleosporium heliocola*. Cut out forthwith and burn every affected berry, and then apply sulphate of potassium (liver of sulphur) at the rate of $\frac{1}{2}$ oz. dissolved in 1 gallon of water, syringing the whole of the Vines therewith, repeating the application a fortnight later.

INSECT ON IMPEASTRUM BULL: J. W. Miles. The maggot on Impeastrum bull is the larva of a species of dipterous insect or fly, but of what species it is not known. If you will send us a further supply we will endeavour to rear the perfect insect, and finally fix the species. The decay is probably caused by the maggots, and is not unlike the decay caused by the Onion-fly, *Anthomyia ceparum*. R. X.

INSECTS: F., Son & S. Undoubtedly a species of Tortrix, and probably *T. ribana*; but the specimens were so battered that it is impossible to definitely fix the species.

MILLER'S GARDENERS' DICTIONARY: J. C. The seventh edition is of little or no value.

MULBERRY-TREE NOT FRUITING: E. W. The sexual arrangements are very variable in the Mulberry. Sometimes the whole of the flowers on a tree are male or wholly female; sometimes this occurs on only one part of the tree. This may go on for years, and then alter to the normal without apparent reason. Nothing can be done that we know of.

MUSHROOM SPAWN IN TURF: Alpha. The present season, when the soil is warmer than at any other, is the most suitable. It need not be put deeper than 6 inches, as at that depth the spawn would not be liable to suffer from fluctuations of warmth and moisture endangering its germinating capabilities. Wet soils are not favourable to Mushrooms. The bricks of spawn should be chopped or sawn into squares of $1\frac{1}{2}$ in., and be placed at the depth named (in heavy soils at a lesser depth), and the earth returned, and made firm in the holes. A drainer's spade of the usual curved shape is a good tool wherewith to make the holes.

NAMES OF FRUIT, GRAPES: C. Abbot, Black Alicante.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.* ROSES: *Correspondents* are requested to remember that we cannot undertake to name Roses or other florists' flowers. They should be submitted to some specialist who grows them on a large scale.—J. S. We cannot undertake to name Roses or other florists' flowers. Send them to some grower.—*Inverness.* 1, abnormal form of *Calendula sp.* (material not sufficient to determine which); 2, *Crepis virens*.—*Chas. C.* 1, *Dianthus deltoideus*; 2, *Saxifraga trifurcata*; 3, *Campanula rhomboidalis*; 4, *Antemum montana* var. (discooid form); 5, *Linaris pallida*; 6, *Ambretia deltoidea* var. *taurica*; 7, *Acaena myriophylla*; 8, *Sedum selckianum*; 9, *S. roseum* var. *limifolium*; 10, *Saxifraga Geum*.—*J. E. H.* The cut-leaved Alder (*Alnus glutinosa* var. *laciniata*).—*R. B.* *Lonicera Ledebourii*.—*Combrion.* *Asperula orientalis*.—*J. M., Devon.* *Ilemaanthus magnificus*.—*J. T. B.* *Verbascum Thapsus*.—*K. T.* 1, *Comptonia asplenifolia*; 2, *Artemisia abrotanum*.—*S.* 1, *Streptosolen Jamesoni*; 2, *Hieracium aurantiacum*; 3, Too wretched a specimen to be named.—*F. E.* 1, *Cacalia ficoides*; 2, *Cypripedium Lawsoniana*; 3, *Sciadopitys verticillata*; 4, apparently *Diospyros Lotus*.—*Major B.* *Diplacis glutinosus*.—*J. T.* 1, *Lycaste Skinneri*; 2, *Vanda tricolor*; 3, *Oncidium luridum*; 4, 5, 6, varieties of *Odontoglossum crispum*.—*F. J. M.* *Tsuga canadensis*, "Henlock Spruce".—*Picea.* 1, *Pseudotsuga Douglasii*; 2, *Picea ajacensis*; 3, *Pinus*, we are not sure which one; 4, *Pinus*, send cones; 5, *Picea polita*; 6, *Prumnopitys elegans*, alias *Podocarpus andina*.—*W. & Sons.* One of the numerous forms of *Pyrethrum trutescens*.—*F. D. & Co.* *Hibiscus rosa sinensis*.

PITCHER PLANTS: *Pitcher Plant.* This would be rightly shown in a class for foliage plants.

ROSE W. A. RICHARDSON: Alpha. See "Propagation of Roses," p. 419, in our last issue; by budding on the Dog Rose, *La Griffeiraie*, Manetti, or Polyantha Rose stocks in August and September; or by cuttings of ripe wood in sandy, loamy soil, 6 to 8 inches deep, and protruding 2 inches from the soil, inserted late in October, preferably whilst with the leaf on, and thirdly, from young immature shoots of forced plants, struck in late winter and early spring, in bottom-heat of 75° to 80°, and top-heat of 60°, under a bell-glass; or better still, in a close frame. These various methods are suitable for almost all sections of Roses.

SCOTS FIR SHOOT: G. W. The larva, probably of one of the Pine-shoot moths *Retinia buoliana* or *R. turionella*. When the trees stand in small isolated areas, the tips of the shoots may be cut off and burned, and the moths may be kept off small patches by lighting smother-fires on the windward side in the evening early in the present month; as at this time of day and season the moths lay their eggs. See "Report of the R.H.S. Conifer Conference," p. 166.

SHRUB: W. G. S., *Swanley.* We are sorry the matter cannot be cleared up after this period of time. Can you not send another specimen.

SPANISH IRIS: G. H. We cannot name the variety.

ST. JOHN'S WORT AND THE ORDER OF ST. JOHN OF JERUSALEM: R. *McIntosh.* The connection of the St. John's Wort with the Order of St. John of Jerusalem may have arisen from the common practice in Germany of wearing an amulet of the plant on St. John's eve, the plant being credited with the magic property of revealing witches, and of exposing them engaged in their nefarious calling. In Italy it is called the "devil-chaser." In many countries it is supposed to preserve the possessor from the evil designs of witches, pixies, and spirits of the air.

STOPPING CHRYSANTHEMUM PLANTS: C. B.

Paukouché, if struck in January or earlier, if first crown buds are wanted, should not be stopped. The others you name are better from second crown buds, the colours being better, and there is less coarseness than in first crown buds, and the plants struck in late December, or early January. If a variety is apt to show an eyed flower from a late bud, take up only on stem to the second break, but in some varieties this causes coarseness.

TWELVE EXHIBITION VEGETABLES IN SEASON IN AUGUST: A *Nine Years' Reader.* Peas, Runner Beans, French Beans, Cauliflowers, Cabbage, Globe Artichoke, Turnips, Turnip-rooted Beet, Carrots long and short, Leek, and Onion, Potatoes, and Vegetable-Marrow, which may take the place of the Globe Artichoke and Leek if so desired. Herbs and salad plants are not included, these not being considered culinary vegetables in this country.

VINE LEAVES SPOTTED: *Ignominus.* The leaves are thin and weak, which shows that the Vines are growing in a border deficient in feeding properties, or that they have lost most of their roots. There are two sorts of spots on them—one due to the perforations of an insect or insects, and the other consisting of the excreta of insects.

VINES: *Constant Reader.* Scalding, brought about by neglecting to afford ventilation early in the morning, or by deficiency in amount during bursts of sunshine. No fungus or disease.

WIREWORM IN THE GARDEN: J. Millard. In the early winter, dress the land heavily with gas-lime, and trench it, most of the wireworms harbouring near the surface being shovelled off, together with the lime, into the bottom of the trenches. Meanwhile, you might insert Carrot and Parsnip roots into the ground where plants they mostly infest are growing; these will form baits, and immense numbers can be caught on them. Sowing Lettuce-seed alongside such crops is another means of attracting them, wireworms favouring Lettuce-roots. Land heavily dressed with gas-lime should not be cropped for four months, or a longer time.

COMMUNICATIONS RECEIVED:—W & SON—S. B. S.—D. B. Weekly Subscriber J. C. F. S. & S.—E. Molyneux, with thanks, to fill this week—R. J. L.—G. W., many thanks.—W. Balfour, J. F. Simpson—T. W. B.—K. W. & Sons—H. W. G.—J. G. H.—E. C. W.—M. A. W. G.—B. Wende—F. P. J.—O. B.—E. C. W.—K. T. M.—P. W.—W. Greenwood—G. M.—A. H.—W. M.—A. D.—W. A. C.—A. R. P.—H. W.—H. L.—L. Boehmer & Co.

GARDENING APPOINTMENTS.

MR. HENRY R. WHITEHEAD, for the past four and a half years Head Gardener and Bailiff at The Priory, Royston, Hertis, as Head Gardener to ISAAC LEWIS, Esq., Bedgebury Park, Goudhurst, Kent, entering upon his duties on July 29.

MR. G. SEPPARD, for the past five years Gardener to the Rev. C. E. ROBERTS, M.A., The Chifferts, Hallow, Trin., as Head Gardener to L. M. CASSELLA, Esq., Bedgebury Park, Goudhurst, Kent.

MR. E. DEE, for the past five years as Foreman in the Gardens at Highlands, Minchinhampton, as Head Gardener to A. T. PLAYNE, Esq., Longfords House, Minchinhampton, Glos.

MR. W. H. LAWRENCE, until recently Foreman at "The Graperies," Bishops Stortford, and two and a half years previously at Hagley Hall, Worcester-shire (under H. B. DIXON), as Gardener to C. K. PROCTOR, Esq., Avenue House, Heaton, N.W.

MR. F. WOODFIELD, for the past three years Foreman in the gardens at Betty Hill, Mansfield, as Gardener to WALTER CUNLIFFE, Esq., Headley Court, Epsom.

MR. JOHN MACLEAN was unanimously appointed, at a meeting of the Paddington Borough Council, held on Tuesday, to be the Head Gardener of Paddington Green and St. Mary's Churchyard, in succession to Mr. George Burley, who is retiring. Mr. Maclean had been for the last seventeen years Mr. Burley's principal assistant.

CATALOGUES RECEIVED.

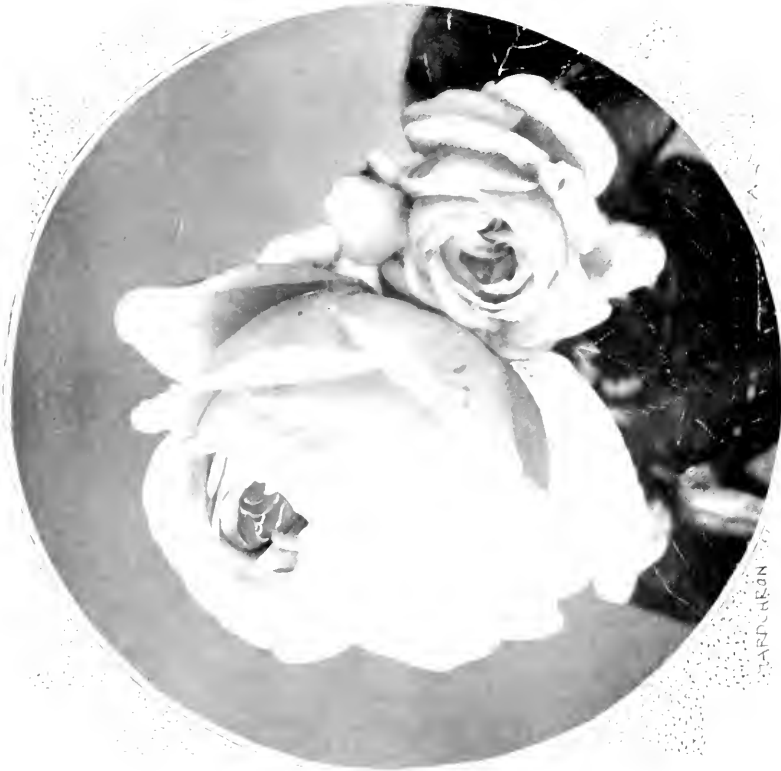
FOREIGN.

HEBE & WULLE, Naples, Italy.

BULBS.

J. C. TISSOT & Co., 31, Rue des Bourdonnoux, Paris.—Horticultural Appliances and Sundries.

(For Weather and Markets see p. ix.)



CLIMBING DEVONSHIRE, F.: FLOWERS CREAMY WHITE, OR PALE YELLOWISH.



SOUVENIR D'ÉLISE VARDON, F.: CREAMY WHITE, CENTRE YELLOWISH.



PRINCESS OF WALES, T.: OUTER PETALS YELLOW FLUSHED WITH ROSE,
CENTRE PETALS GOLDEN YELLOW



LONGWORTH FAIRY : SHADED ROSE.



COUNTESS DE NADAILLAC. T.: PEACH SHADED WITH APRICOT,
BASE OF PETALS COPPERY.



THE BRIDE, F.: WHITE.



THE

Gardeners' Chronicle

No. 759.—SATURDAY, JULY 13, 1901.

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A MIDLAND GARDEN.

RATHER too late in the autumn of last year, it was in the middle of November, I planted a bed of *Narcissus* bulbs, the variety "Cynosure," for the purpose of testing the market value of the flowers in the spring. They did not come into full bloom till April 23, when I offered them to the leading florist in Leicester, and was told that they were not worth more than a penny a dozen wholesale price. At this figure I declined to sell, and gave them away to my friends. A neighbour, who is a professional market gardener, tells me that he grew the same variety, but by forcing he got them into bloom before the rush of foreign flowers came in, and sold them in the retail market at 2s. per single bloom, which paid well. He says also that even after the foreigners were in the market his old customers preferred his blooms at a higher price, because they were fresher and lasted longer. *Cynosure* is a good sort, one of those with the crown half the length of the perianth; it remains fresh for a fortnight if left growing, and for a week when cut. The *Emperor* is also a good variety, one of the *Dalldodil* section, with a long crown; it is a large but one flower.

A tree about 12 feet high of the yellow-berried Holly has been attacked by some small insect *Phytomyza ilicis*, Holly leaf-miner, which has laid an egg on nearly every leaf, about the centre of the upper

surface. The egg has hatched into a grub, and the grub has eaten the soft cellular tissue under the skin, causing a whitish patch of irregular shape about the size of a sixpence, with a brown spot in it containing the empty case of the chrysalis, about one-tenth of an inch long, from which the fully-formed insect, a small fly, has escaped. All the other Hollies, including the variegated forms, have been partially disfigured in the same way.

The art of designing, whether in form or colour or material, is to some extent a natural gift; but it may be largely cultivated by tuition and practice. Do any of our Schools of Art and Design teach landscape gardening? It is a beautiful and most interesting art. I remember reading long ago of a small suburban garden so artfully laid out with hill and valley, winding walks, grass, shrubs, rockery, ponds, fountains, and arbours, that in seeing it all you would fancy you had been wandering over many acres, instead of a few hundred square yards. To produce an effect like this you want a long purse, and the result is not quite satisfactory after all. A well-designed garden requires open spaces and flat lawns, as well as more picturesque details. To design flower gardens was a boyish amusement of mine, and in the course of my life I have laid out perhaps a dozen gardens for myself and friends, in simple and inexpensive fashion; but I have had no tuition, and am not an "expert." It greatly amuses me, however, in the intervals of other work, to try on paper what can be done within the limits of this one-acre garden, to give it the greatest possible charm; supposing always that I had as many sovereigns to play with as there are stones on the gravel walks, a hundred different schemes occur to me. Each has some desirable effect, but I have never yet succeeded in getting all the delightful things I should like to have into this limited area.

I want a lawn with a few cut-out flower-beds, surrounded with flowering shrubs and two or three shade trees. I want a winding walk wide enough for two abreast through a thick shrubbery, and with a small arbour overgrown with creepers, where you may be quite secluded, and see only leaves and flowers, and hear only the birds. I want a rippling streamlet with grassy banks open to the sun in some places and shaded in others; and a quiet pool where the water goes to sleep, and water-loving plants may live and be happy. I want a sunny rockery for alpinists, and a shady wood for Bluebells and Wind-flowers, and plenty of fruit trees, and strawberry beds, and a picturesque thatched fruit-house girdled with leopards, to store the Apples and Pears in, cool in summer, and warm in winter. I want a fountain with goldfish, and a square old sundial, and a small observatory, and some frames and propagating houses. I do not want a tennis-court, I hate to see the sweet green grass scored over with chalky squares, and I have not much sympathy with "games" of any sort, for adults. They seem to me to waste time so terribly. Physical exercise can be got in much more useful ways.

What has become of the old-fashioned nossegay? It was a word familiar to the last generation, but it seems to be obsolete now. Every bunch of flowers used to be called a nossegay, though the correct form was fan-shaped, with a background of greenery,

Nossegay was a good old Saxon word, but French has prevailed, and we call everything now either a bouquet or a buttonhole. Bouquets have various forms, but the fan-shape is dead. In the country the approved form is a hemispherical mass in the carpet-bedding style, with the stalks tightly bound together; but in good houses there is much more taste displayed than there used to be in the arrangement of flowers in vases of many patterns. A fine Rose with foliage never shows better than in a specimen glass by itself.

Both nossegay and bouquet seem to imply that flowers represent fragrance as well as form and colour, and indeed a fragrant flower is like a smiling face, beauty crowned with its divinest charm. Scentless flowers, however lovely, seem always cold and formal, like the waxwork *Camellia*, or the pepperbox double *Dahlia*. It is a little surprising that there is no recent work on sweet-scented flowers. Sixty years ago my first literary venture was a small volume of 130 pages entitled *Flora Odorata*. It has long been out of print, and is rarely seen in the second-hand catalogues; but so far as I know, it remains the only work dealing with the sweet-scented flowers alone. See "Odorographia," by J. C. Sauer; Gunney & Jackson, "Enteromorpha Row"; and the "Art of Perfumery," by G. W. S. Plessor; Longmans & Co., London. At that time the scientific cause of fragrance was very little understood. I remember that though I was anxious to put into my little book some explanation of odour, I could find none, nor was I able to make even a plausible guess at it. In *Balton's Class Book of Botany*, published ten years later, it is stated that "the sources of odours in flowers are very obscure." But reference is made to some French experiments in 1827, showing that though some flowers secrete volatile oils which evaporate and spread through the air, there are others in which no such oil can be detected, and whose fragrance can only be explained physiologically, or, as we should probably now put it, on the supposition of some vibratory emanation communicated through the ether, as in heat and light. Neither in Sachs' Text Book nor in Kerner's *Natural History*, is there any reference to this subject. Whether there is any truth in the physiological theory, or whether all odours are due to gaseous emanations, I am still unable to say. An attempt has been made to construct an "odophone" scale, like the musical scale, and to show that certain odours harmonise like the notes of a chord. This may be a correct idea, but the present state of our knowledge seriously warrants such an attempt.

Among the few herbaceous plants that will thrive and flower in shady places, the pretty *Desmodium* eximia may be included. It does equally well in full sun-shine, but a rather heavy shade does not seem to affect it, so I am planting it in a "nuttery," where the nut bushes have grown tall, and the ground below is bare, in company with *Anemone nemorosa*, *A. ranunculoides*, *Pulsatilla*, fragrant, and *Primrose*. It is rather curious that the *Primrose* loves the shade, while its cousin, the Cowslip, will only flourish in the sunny meadows, and the hybrid *Polyanthus* likes a little of each.

I sowed our Scarlet Runner Beans on May 10, in accordance with the popular notion in these parts, that this is the exact date on which they ought to be put in the

ground. The Dwarf Beans were sown a few days previously, after being soaked in cold water for six hours. Our first Potatoes were planted on April 2, three sorts, viz., Ring-leader and Windsor Castle for kidneys, and British Queen for round ones.

A well-kept garden is a great delight, but it involves continual labour—digging, planting, sowing, watering, weeding, mowing, rolling, pruning, training, protecting, gathering and preparing for use—these, and all the addenda which they imply, furnish occupation for every season, delightful occupation, healthful and educational, both for body and mind, but imperative and not to be neglected with impunity. Old men who retire from business and have nothing to do but eat and sleep, and read the papers, die off rapidly. They should take to gardening, and do part of the actual work themselves. It is refreshing and invigorating to be at work on the fresh soil and among living plants. The back may ache sometimes, and the perspiration gather, but these little expiations will be disregarded in the satisfaction of "some thing attempted, something done;" and in watching for results the fact that we have laid the train ourselves gives double interest.

"Genius, it has been said, is the power to do more than the average of work. It is so, because the more the work the intenser the life, and genius is that which sees what is admirable and burns to pursue it. No noble soul desires rest. Labour is the joy of existence, and he is the nearest to angelic life who wastes no moment of time, who needs the fewest hours of sleep, to whom an easy chair is no luxury, who works persistently with brain and hand for noble purposes, rejoicing in his toil, sure that he is doing holy service to his God, his brother-man, and himself." F. T. Mott, F.R.G.S., *Birstal Hill, Leicester.*

THE REPLANTING OF BULBS THAT HAVE ONCE FLOWERED.

COLONEL WHEATLEY, in a lecture delivered before the Royal Horticultural Society on June 18, gave the result of his experience with regard to the use of bulbs for spring bedding. I quote the following passage from the report in the *Gardeners' Chronicle* (p. 414):—

"Preparations for spring bedding were made in the autumn, bulbs being planted in November, after the beds had been trenched and manured. . . . Old bulbs ever so well cared for were indifferent, and did not flower so finely or so early as new ones did. After blooming, they had to be lifted before the foliage was matured; hence were not capable of giving good flowers the second year."

As a matter of practical gardening, it may be admitted that this statement contains a certain amount of truth; but it does not by any means finally dispose of the question. The difficulty which Colonel Wheatley describes is undoubtedly real; but it is one which I think we may claim to have successfully surmounted to a large extent at Kew; and the result of our experience may be useful to others who wish to make a display of bulbous plants in spring at a moderate expense.

I must premise that Kew being primarily a scientific establishment, the funds available for decorative display are very inconsiderable, compared with those which Colonel Wheatley commands. If we were to use each year "new" (by which I presume is meant purchased) bulbs, the cost of the tens of thousands which we plant would be enormous and pro-

hibitive. I took the trouble some years ago to estimate at the current price, the cost of a single bed of "Emperors," and found it ran to £400; and even if we were willing to buy, we could not obtain in quantity the numbers of the rarer and more valuable kinds, especially of Tulips, which we require.

As purchase, so far as Kew is concerned, is entirely beyond our means, we attain our results by growing the bulbs ourselves. We never purchase except to secure a stock to breed from, and the entire cost of our present annual display has been insignificant. When we started in 1886 we made a very modest beginning, mostly with small parcels of bulbs, for which we were indebted to the generosity of friends.

Mr. Herbst, of Richmond, gave us in that year 200 Emperors. We now possess at least 20,000, all derived from the original stock.

As our Daffodils and Tulips at Kew have to be replaced, as elsewhere, by bedding-out and other plants, the bulbs have to be lifted when the foliage is still green. They are then "heeled in" in beds of ashes; this allows the foliage to slowly ripen off. The nutriment contained in the leaves is gradually transferred to the bulbs. The process is complete when the leaves have dried up to the consistency of thin paper. The bulbs are then lifted again, cleaned, and placed on shelves in a dry and airy shed, where they remain till they are planted in the autumn.

When the bulbs are cleared, the offsets, or "chats," are carefully removed. These are planted in a nursery, and after a year or two are fit for use in the public grounds.

So far as my observation goes, I am unable to see any deterioration in the quality of the flowers produced now on the system pursued at Kew. In the case of Tulips, I am disposed to think that we even get better results than with purchased bulbs. It is, I believe, well known that in order that these may have a taking appearance, they are put on the market before they are thoroughly mature.

With Hyacinths we have not been so successful. Occasionally the bulbs will flower fairly the second year, but after this, the parent bulb breaks up, and the shoots require many years' cultivation before they are good for anything. Probably, however, in this case we should have been equally successful were not the young bulbs liable to be destroyed in great numbers by winter frost.

But as regards Daffodils and Tulips I may mention, as a proof that bulbs raised at Kew are quite equal to the commercial standard, that we have frequently been asked to sell portions of our stock to the trade at remunerative prices. W. T. *Thiselton-Dyer.*

LILIES AND THEIR CULTURE.

(IN ANTICIPATION OF THE LILY CONFERENCE.)

LILIES, long regarded among the most important groups of garden plants, practically extend in their range of distribution throughout the northern hemisphere, and are found growing under nearly all conditions of climate save the extreme arctic and tropical. The plants are mostly found on cool sites, even in sub-tropical countries, and in association with trees and shrubs, which serve two purposes in the interests of the Lilies—(1) they provide them with useful shade, a cool rooting medium, protection from winds, and their leafy canopy assists in keeping the atmosphere about the plants damp and congenial; (2) the roots of trees, shrubs, and other vegetation play an important part in preserving Lily-bulbs, by encircling them and removing excessive moisture from among the scales. Moreover,

the falling leaves of trees, &c., form a new soil, into which the stem-roots of the Lilies (where such roots are present) could work, and thus help them to build up the floral axis without undue strain upon the bulb.

A few types grow on mountain slopes, in schist and other *débris* of rocks, invariably in cool rifts where the roots can find moisture, even if the bulbs themselves are frequently dry. Others grow on the banks of small streams in such a manner that, whilst the bulbs are but moderately damp from the natural moisture in the soil, their roots are reveling in the more abundant moisture beneath. Many of the so-called "bog" Lilies grow in this manner; and one reason why these frequently fail to grow well and establish themselves, is because their bulbs, as well as their roots, are continually very wet, and that the moisture about them is stagnant and sour. The bogs and swampy places in woods in these islands may be accepted as fair samples of the conditions under which the American Lilies grow, and the margins of such places afford excellent sites for plantations of these charming Lilies.

The teachings of observant collectors, combined with the experience cultivation gives, enable the cultural requirements of Lilies to be summarised in a few words. They require a cool rooting medium, shade from strong sunshine, and some means must be employed to preserve the bulbs from injury whilst in the soil, either by reason of lack or from excess of moisture, or great heat; furthermore, the bulbs meet with enemies under cultivation that would not be found in their native habitats, and these must be guarded against.

Lilies cannot be established in every garden unless special sites are selected, and special soils prepared for them. Practically, they may be flowered once anywhere, given a sufficiency of water, if sound mature bulbs are planted, but it will be at the expense of the bulbs. A few species have powers of endurance sufficiently developed to enable them to live for some years without suitable cultivation, but the majority have not. The key to successful cultivation and establishment of any species of Lily will mostly be found in the formation of the bulb and a study of its rooting peculiarities, and if I dwell lengthily on the subject of roots, it is because I feel certain that a study of the bulb and roots of any *Monocotyledon* will help the cultivator to understand its wants, the more so if he is able to seek the cause of this or that peculiarity in the records of the climate in which the plant grew in a wild state.

The North American Lilies require the shade of trees and a peaty soil approaching wetness, not a bog, unless the bog be covered with a layer, 1 foot or so in thickness, of clean, sweet vegetable deposit. Lilies provided with abundant stem-roots, are best planted so that shade may be afforded for some distance up their stems, in order that such roots may grow and develop to the fullest extent. It is not necessary to shade the whole plant. Such familiar types as *L. auratum*, *L. speciosum*, and *L. tigrinum*, are examples of stem-rooting plants which grow infinitely better with a full exposure to the sun's rays, provided they are moist and shaded below. In fact, the abundance of stem-roots is governed by the degree of shade in which they (the stem-roots) grow.

Lilies of the Martagon group, *L. monadelphum*, and *L. excelsum*, will frequently produce serviceable stem-roots if planted among shrubs in a cool spot, or if grouped together in pots, with a cool, damp atmosphere about the roots and abundant sunshine overhead. *Lilium Browni* and *L. odorum* are particularly well

served if given this kind of treatment, sunshine above being essential to bring out the warm colours on the outside of the flowers, whilst the roots only thrive in a shady place.

THE KIND OF BULB TO PLANT.

It is a remarkable fact that hundreds of tons of Lily-bulbs are annually imported into this country, and that our stock of established plants does not materially increase from out-

for a temporary display as pot plants; they force well, because they have greatest amount of nutriment in their fat scales, and can produce a stout stem and support it till it produces stem-roots. A medium-sized bulb, compact, and sound in texture, is the best for general planting. These have two or three years ahead of them in which to reach their full size; they start to root earlier in the season (as witness the behaviour of an offset growing

the first year's inflorescence being reduced to one or two flowers, or entirely removed to reserve strength.

In order that the cultural requirements of this large group of plants may be the better understood, I propose to classify them according to their requirements, disregarding for the while the botanical groups based on structure alone, for these groups frequently contain two given species which, though allied botanically, cannot possibly be grown together.

PEAT-LOVING LILIES.

The only members of this group are *L. auratum* and its many garden forms. *Lilium auratum* thrives in peat, it will also thrive in a compost prepared to resemble peat as nearly as possible. A suitable mixture would be the sweepings of parks and roadsides—rough leaves and grit—turned two or three times to free it from worms and grubs, and mixed with half its bulk of friable turfy loam. The position in which to plant is of more importance than the compost—a place among *Rhododendrons* suits them admirably, or a place among other shrubs where the roots receive some shade, and moisture is available throughout the summer. The beds or sites of the groups should be dug fully 18 inches in depth, and the holes at planting time should be half filled with the compost; tread this firmly, and place each bulb on a handful of sharp sand, and about 9 in. distant from its neighbour, and cover all with more sand or grit to keep away slugs and any eelworms that may infest the adjacent soil. Finally, fill in the remainder of the compost, tread it firmly, and cover with a layer of half-rotted leaves to keep out severe frosts, and they are safe for the winter. Another layer of leaves should be spread over them in May, to cover and feed the stem-roots, and occasional waterings should be afforded if the weather be dry. If necessarily planted in beds with a sunny exposure, a few low-growing plants should be introduced among them, such as would shade the roots. Annuals will do for the purpose. The garden forms of *L. auratum* succeed under similar treatment, among them we have *rubro-vittatum*, a grand form with a broad band of rich red down each petal, and similarly coloured spots elsewhere; *picturn*, a similar flower, but with the band confined to the apical half of the petals; and *Wittei*, a pure white flowered variety, with a central band of yellow—one of the most beautiful, but of delicate constitution. These, with *platyphyllum*, *platyphyllum virginale*, and a new richly coloured variety called "Crimson Queen," are the best of the group. Numerous forms occur in collections, scarcely two being exactly alike in coloration and spotting. Grouped here and there among *Rhododendrons*, *Bamboos*, &c., they afford glorious effects. Two years ago the new Himalayan-house and the *Rhododendron*-beds beside the broad walk at Kew contained numbers of these plants in fine condition, their big spikes of massive flowers, carefully associated with the surrounding greenery, were the admiration of all who saw them; moreover, it afforded a useful lesson of the manner in which these plants should be grown and displayed to the best advantage.

THE SPEROSEM GROUP.

This is a group of Lilies well adapted for general planting; it includes *L. speciosum*, *L. tigrinum*, and their beautiful garden forms. All that they require is a fairly strong soil, and plenty of water whilst growing; a sunny position suits them well, but if the roots are shaded, either by close planting or by interspersing other plants among them, so much

beside, but detached from its parent), and are thus able to replenish the food store as fast as it is depleted by the ascending spike, and to increase such store when the stem is self-supporting, or nearly so.

Lilies that produce no stem-roots, or very few, should be planted as soon as growth ceases, in order that the basal roots, their only support, may make headway before the new axis starts to flower. They are the most difficult Lilies to force on this account, and are rarely satisfactory in pots, unless they are planted a year before they are wanted;



FIG. 9.—PROFESSOR C. S. SARGENT AND MR. H. H. BENNELL, AT THE OPENING OF THE HORTICULTURAL HALL, BOSTON, U.S.A. (SEE P. 26.)
(The Professor is the right hand figure of the illustration.)

ward sources. It was the case ten years ago, as now. Why this should be so is a little difficult to determine. Many, such as *L. longiflorum* and *L. auratum*, were destined for pot-culture, and shared the fate of Hyacinths grown for the same purpose. Some, particularly the large bulbs, could not be expected to live long. In the first place, they had reached their largest size; and secondly, these large bulbs feel the removal, transportation, and incidental exposure more severely than those of a medium size, most of the trouble being the decay of the basal disc. Large bulbs are best adapted

the better. They all force well, and may be regarded as most accommodating Lilies, such as the unskilled amateur may grow without fear of failure. The bulbs should be planted fully 6 inches deep in a well worked soil, placing sand above and below the bulbs to keep away slugs. The garden forms of *L. speciosum*, numbering about a dozen, are very showy plants, and are a great advance on the old types imported from Japan twenty years ago. The best of these is *album novum*, a lovely pure white-flowered form with yellow anthers and massive petals of great substance and considerable breadth. It is one of the best white Lilies in cultivation; it succeeds best when planted in a sheltered, warm spot, as it flowers late in the year, and at a period when cold nights may be expected, such as would check its later buds. *Melpomene* is another grand form with equally large flowers of a dark crimson colour, elegantly margined, and freely spotted with white or a pale shade of pink. This is the best of the coloured forms, the flowers being exceptionally rich and bright. Scarcely less choice, and equally useful, are such varieties as *Kreutzeri*, an improved *album*; *macranthum*, a large-flowered, rich-coloured roseum; *punctatum*, a lovely white flower, delicately shaded and heavily-spotted pink. A very dwarf variety named *cruciatum*, is most suitable for pot culture, or for planting in the foreground of the taller groups; its flower resembles that of *Melpomene*, but it is not nearly so large. The older forms of *L. speciosum* are too well known to need mention here; their hardiness, freedom of flowering, and telling tints of colour, render them useful for massing in large beds, and for more or less "wild" gardening.

Lilium Henryi, a very fine Lily of recent introduction, and one which possesses all the good qualities one could wish for, and more besides, belongs rightly to this group. Botanically, it is nearest *L. speciosum*, and by some has been considered to be only a variety of that variable species. As a garden plant of exceptional merit, it has come to stay. It is one of the few Lilies that may be raised from seed with ease, and once planted, it comes up year after year with increased vigour. When fully grown, it attains a height of 10 feet (I have measured one 15 feet high), and carries an inflorescence of twenty or more elegantly-reflexed, orange-coloured flowers, on branched pedicels, the centre of each flower being covered with numbers of petaloid processes, and the margins are handsomely spotted a richer colour. Excepting a clear lemon-yellow coloured flower, and practically all shades of orange with much diversity of spotting, as well as of leafage, no marked break of colour has yet appeared, but each succeeding year extends the range of colour this stately Lily manifests. Culturally, it requires a strong, preferably a virgin soil, and that the bulbs should be planted 8 inches deep, with the usual envelope of sand around them. In scores of Lily gardens that I have seen throughout the country, I have not met with a single plant of *L. Henryi* doing badly, save where the mode of cultivation was obviously faulty. One point in its cultivation should be remarked here. Its stem-roots are very strong and numerous, and they may be encouraged to form several inches up the stem with the aid of a little damp moss. They should be covered early in the season with rich soil and a mulch of very old manure, the tall, strong stems depending largely for their support upon these. Moreover, such a tall Lily as this, even when well staked, often becomes loosened in windy and wet weather, so that the better root-anchorage it has, the better will it be able to bear the strain.

Hybridists should make note of the fact that this Lily is an excellent seed bearer, and that it has many good qualities few other Lilies possess. Some work is already being done in crossing this Lily with others, but of this it is yet too early to speak. It forces well, and at all seasons. *G. B. Mallott*.

(To be continued.)

LILY AND OTHER EXPORTS FROM JAPAN.

I beg to send you herewith a very interesting statement showing the exports of horticultural articles from Japan during the last twenty years. You will perceive therein that the exportation of Lily bulbs since 1896 took a sudden rise, which was principally owing to the great demand for *Lilium longiflorum*. Until then there had been but little demand in the European market, and what there was, *Bermuda* supplied; but when the demand increased, and the *Bermuda* Lilies showed signs of decrease, we began with the exportation of *L. longiflorum*, which has increased from year to year, and promises, as this statement shows, to become of great value. The second item of importance is *Lilium auratum*, which is followed by *Lilium speciosum*, the white and red variety, and in addition to these all the other Japanese Lilies. Under the heading of plants and trees come also trunks of *Cycas* and dried *Cycas* leaves, as well as the dried inflorescence of *Eulalia*, two articles of which sometimes large quantities are exported:—

Year.	Plants and Trees.	EXPORT.	
		Yen. sen.	Lily Bulbs, Yen. sen.
1870	"	3,322 78	1,081 50
1880	"	2,238 10	8,115 16
1881	"	3,310 92	12,152 10
1882	"	4,550 76	33,144 70
1883	"	14,870 20	12,900 05
1884	"	1,228 08	15,027 56
1885	"	5,200 20	11,571 02
1886	"	6,562 60	13,575 56
1887	"	8,558 10	13,759 50
1888	"	13,541 78	16,881 63
1889	"	12,770 76	25,020 00
1890	"	17,232 51	25,017 12
1891	"	16,701 05	26,634 15
1892	"	18,103 36	31,408 18
1893	"	19,157 01	35,428 06
1894	"	20,644 82	68,253 92
1895	"	24,625 10	81,701 06
1896	"	14,613 32	192,289 12
1897	"	11,091 27	142,605 74
1898	"	11,971 61	128,228 21
1899	"	81,650 89	251,641 88

One yen or 100 sen, equal to 2 shillings, or 50 cents, in the United States currency. *Alfred Unger, Proprietor (L. Boehmer & Co.).*

ORCHID NOTES AND GLEANINGS.

CATLEYA MOSSIE COUNDXONIENSIS.

A flower of this extraordinary variety is sent by Mr. Collier, jr. to Geo. Singer, Esq., Compton Court, Coventry, who is the fortunate possessor of the plant. The last phenomenal flower always appears to be the most wonderful, but it is scarcely possible that any advance on this one can be expected, for it is not only of great size, but of a very rich colour. The flower measures 10 inches across the extended petals, each of which is 3½ inches in width at the widest part; the sepals and petals are of

a bright, light purplish-rose colour, but the latter have a white midrib in the lower third part, and silvery veining towards the edge of the deeply crimped and slightly fringed margin. The base of the lip on the exterior is of the same colour as the petals. On the inner side it is prettily marked with purple and orange at the base; the front lobe, which is 3 inches wide, is marked with violet-tinted purple, deeply margined with a frilled irregular band of rose colour.

CATLEYA MOSSIE "EARL LEONIC."

This is a most beautiful flower from the old florist's standpoint, its segments being broad, and forming a circular flower. It measures a little more than 8 inches in diameter, and the petals are 3½ inches in width. The flower, which has crimped and fringed petals and lip, belongs to the light-coloured section, the sepals and petals and side-lobes of the lip being white, with a distinct shade of pale lilac-pink over the whole surface. The base of the lip is purple, with a white veining; the centre and front of the side-lobes orange; and the centre of the front lobe of a light purple tint, with marbling of a darker purple tint, and the margin of the crimped lip is white, fringed with rose for about a quarter of an inch wide. This very distinct companion plant to *C. M. coudroniensis* flowered with Geo. Singer, Esq., Compton Court, Coventry.

PROLONGING THE SEASON OF THE STRAWBERRY.

Late Strawberries are always valued, and specially so in a dry season like the present. It is a praiseworthy practice to have beds of the latest varieties on borders facing north, and screened on the south by walls or tall hedges, and where the plants do not suffer so much from drought in a season like this one. Some of the later varieties are not very strong growers at Syon. The soil in which Strawberries are grown here is suitable enough, and is well manured, and not too clayey. For many years I have relied upon young plants for the earliest crops of dessert fruit, but in the case of the late varieties sufficiently good returns are not obtained from these the first season. The late Pine Strawberries do well generally in the second year after planting, being mulched, and also afforded liquid-manure when obtainable.

The best of British Strawberries may be grown on a north border in a soil that would not grow them well in the more open quarters of the garden. As most gardeners know, north borders have drawbacks, such as loss of plants in winter; but this may be met by planting rather closer than usual, or by filling up vacancies in the lines with strong reserved plants. As regards cultivation, I have nothing new to note, but will briefly point out how the Strawberry season may be extended by growing certain varieties, and in diverse positions. The perpetual fruiting varieties, *St. Joseph* and *St. Antoine de Padoue*, will do much to lengthen the season, though these lack the size of the older varieties, and *Alpines*, grown from seed annually, would assist to extend the season till October. *Alpines* are grown readily from runners, but seedlings furnish the best fruit, and as *Alpines* are small growers, they may be planted much closer together, say 9 inches by 1 ft.

I have grown the variety *Eleonor*, *syn. Oxonian*, for several years on account of its lateness, not for its quality. It is large and showy and useful. I do not know of any variety later than *Oxonian*, and few are more hardy, or that will succeed as well in the autumn.

As late varieties of good quality, Filbert and Frogmore-Pine may be recommended, the second being the better fruit of the two, but it is not so heavy a cropper, and at Syon it succeeds only on a north border, owing to the lightness of our soil. The Filbert Pine succeeds in light soils, having ample foliage, and it scarcely ever fails to fruit satisfactorily. In order to do it justice, the plants should be treated like British Queen, that is, a quarter should be planted each year, and destroyed after it has fruited for two years.

Doubtless the Latest-of-All Strawberry has come to the front quicker than any other, but it is not suitably named, it being not so late as several others. The fruit of Latest-of-All

CYMBIDIUM LOWIANUM × C. EBURNEUM.

ALTHOUGH crosses have long been known in Europe between *C. Lowianum* and *C. eburneum*, in which both have been used as the seed-bearing parent, the one which we illustrate (fig. 10) in the present issue is the first, so far as our knowledge goes, of a cross raised and flowered in Australia. According to information kindly furnished by Messrs. F. Sander & Co., of St. Albans, the seed of artificially-fertilised flowers was sown by Mr. Godwin, gardener to John Hay, Esq., of the Crow's Nest, North Sydney, in the month of July, 1896; and a plant of this sowing flowered in April of last year.



FIG. 10.—*CYMBIDIUM LOWIANUM* × *EBURNEUM*, IN THE GARDEN OF J. HAY, ESQ., CROW'S NEST, NORTH SYDNEY, NEW SOUTH WALES.

is of good quality, resembling one of its parents, viz., British Queen, which it exceeds in size. The plant not being robust, it should be planted rather close together, and on a heavy soil. It also succeeds here on a north border, being treated similarly to British Queen.

Another novelty is Trafalgar, and though like Royal Sovereign in size, shape, and colour, it is much later than that variety, and possesses a much finer flavour. It makes also a more vigorous plant.

My note would not be complete unless I included Waterloo, although Latest-of-All and Oxonian are preferred here to follow the Pine Strawberries. The new race of perpetual fruiterers should give us fruit till November, for the fruit is produced in succession on the young growth. Though small, it is well flavoured. *G. Wylthes, Syon Gardens.*

As Mr. Sander remarks, "It is evident that the climate of Australia is favourable to the raising of Orchids; and in fact, in this particular instance, a record is established in rapid growth." The flowers measured 5½ in. across, which is quite equal to the standard in point of size.

THE MIXED FLOWER-BED AND ITS EDGING.

The same causes which led to the substitution of plants in mixture for the massing method of planting is now becoming apparent in the stereotyping of the fashion of planting in gardens generally. There is far too much uniformity of practice, so that go where you may the *mélange* is the same. As regards the bedding-out pursued by the various park superintendents in the metropolis, the mono-

tony is fearful to behold, few of them having the least idea of altering their methods or of striking out a line for themselves.

These beds being seen by country gardeners, the latter straightway make copious notes, and put into practice the same year or the next, the methods observed, so that the country gentleman's flower-garden is more or less a replica of the beds in Battersea, Regent's, Hyde, and other town parks. To my idea the geometrical garden, if it be the only one, is a mistake, its very formation, the relative smallness of the beds, and the narrowness of the intervening walks and spaces of turf and gravel, often compelling the gardener to employ dwarf plants in order to preserve or indicate the outlines of the beds. Such a garden might be tolerated as an adjunct close to the house, out of sight of the principal rooms, and away from the main garden-front of the house, constructed on a small scale, and having some relation to the space at command, and separated from the rest of the garden by an ornamental iron fence, covered with creeping flowering plants, a low wall of an ornate character, or one consisting of a balustrade merely, or an evergreen hedge of Thuja, or one of *Pyrus japonica*, or of climbing Roses, *Jasminum officinale*, or *Honeysuckles*.

To return to the mixed flower-bed, which can be more incongruous than a stiff, formal line, such as may be seen in every London park, of *Echiveria secunda glauca*, *E. Peacocki*, *Sempervivum tabuleforme*, a stiff-looking grass, a row of dwarf Lobelia or of Golden Feather, and similar plants, which, whilst appropriate enough on a rockery, are out of place when thus arranged as edgings to mixed flower-beds. If the mixed bed be adopted, let us have no such incongruity as a formal line of these plants, but rather something which, whilst dwarf of stature, shall fittingly indicate the outlines of the beds in an irregular manner.

The edging that I would recommend for the mixed bed are Pansies, Violas, Verbenas, *Arabis albidia*, *Armeria cephalotes alba* and *rubra*, *Ambrosias*, *Campanula isophylla*, *C. pulla*, *C. pusilla*, *C. carpatia*, *C. garganica*, *Cerastium tomentosum*, *Helianthemus*, *Corydalis lutea*, *Cyclamen europaeum* and *C. neapolitanum*, *Dactylis glomerata variegata*, *Draba aizoides*, *Gentiana acaulis*, *G. affinis*, *G. bavaria*, *Geranium argenteum*, *Hepticia triloba* in all colours, *Heuchera sanguinea*, *Heberis corneifolia*, *I. gibraltaria*, and *I. sempervirens*; *Lithospermum prostratum*, *Lysimachia Nummularia*, *L. N. aurea*, *Myosotis* in variety, *Nierembergia rivularis*, the dwarfed *Enotheras*, as *macrocarpa*, *marginata*, *Pilgrimi*, and *faraxifolia*; the dwarf *Phloxes*, as *amena*, *subulata*, *procumbens*, *canadensis*, &c.; *Saponaria ocyroides*, *Polyanthus*, double-flowered *Primulas*, *Violets*, *Pinks*, and *Auriculas*.

These plants should be planted sufficiently wide apart for their full natural development, and should not be kept to rigid lines, either within the boundaries of the beds, or when allowed to grow beyond them if such luxuriance met with approval. The flower-beds I have in my mind, are such as consist of suitable mixtures of hardy and half-hardy annuals; hardy herbaceous perennials, chosen for spring, early or late summer, and autumn flowering, as may be desired; or beds consisting of one or at the most two species. Sub-tropical bedding lends itself to this kind of treatment, but the plants being chiefly tender exotics, many of which require housing in roomy houses, scarcely come within the scope of an ordinary garden. Still, there are many for which space could be found, as for example *Cannas*, *Phloxias*, *Plumbago capensis*, without mentioning *Wigandias*, *Himene*, *Hemp*, *Amaranthus*, *Solanums*, &c. *M.*

UNITED STATES OF AMERICA.

OPENING OF BOSTON (MASS.) NEW HORTICULTURAL HALL.

The formal opening of Boston's splendid new Horticultural Hall took place on the evening of June 3, when one of the finest exhibitions ever held in America was given. The arrangements for the opening show were entirely in the hands of Professor Charles S. Sargent (fig. 9, p. 23), whose fame as a horticulturist and arboriculturist is world-wide, and the result of his earnest and persevering work was exhibited in a very gorgeous, and at the same time æsthetic flower-show we have ever had in the United States. No premiums were offered by way of inducement, Professor Sargent secured all the exhibits from amongst his personal friends, and the best New England collections sent their choicest material. No exhibitors' names were allowed to appear, nor were any of the plants named, the latter arrangement being considered a mistake. The various Orchids, Palms, &c., were utilised by those having the arrangements in charge, irrespective of ownership; all the pots, baskets, &c., having special marks of identification. The result of all this was a superb show, such as we are unlikely to see in America for many years. That the Massachusetts Horticultural Society has done well in building new quarters was amply demonstrated by the crowd of people who attended on the opening evening, and by the attendance of some 35,000 persons on the eleven days the show remained open. Prices were 2s. until 7 P.M.; from 7 till 10, 1s. The exhibition, by special permit of the legislature, was open from 12 A.M. to 10 P.M. on Sunday, June 9, when nearly 1,000 attended. A specially pleasing feature was the attendance of hundreds of school children with their teachers, these came in at reduced rates. The opening show will long be remembered in the annals of American Horticulture, and it will net a good sum for the grand old society which has done so much for its advancement.

The main feature in the principal exhibition hall, which is 122 x 50 feet, and 43 feet high, was a magnificent display of Azaleas from Prof. C. S. Sargent, comprising some 200 plants, many of them specimen plants; these were sunk in the ground, the surface being neatly turfed over, and being arranged in large beds for colour effect (backed next the walls with large Palms), they were very effective. A huge sloping bank of Rhododendrons, some 20 feet high, from Mr. H. H. Hunnewell, of Wellesley, Mass., was another feature in the same hall. In the large lecture-hall, a large group of immense standard Wistarias also from Prof. Sargent, carrying thousands of racemes of flowers, was greatly admired; as was a similar and fine group of *Trachelospermum jasminoides* from the same gentleman, the latter specimens 6 to 8 feet high, and smothered with bloom. A large bank of seedling *Hippeastrums* from Dr. C. G. Weld, Brookline, Mass., of superb quality; also large displays of *Gloxinias*, fancy and zonal *Pelargoniums*, and *Hydrangea otakusa*, were shown in this hall.

In the small exhibition hall, which was entirely devoted to Orchids, arranged with Palms and other foliage plants, was by far the most extensive and choicest display of these plants ever seen in the New World. The plants were arranged according to genera, and made a much more impressive display in this way, than when mixed up in promiscuous groups. There were specially large and fine groups of *Cattleyas* Skimmeri, Mossie, Mendelii, and gigas, *Laelias purpurata* and cle-

gans, *Miltonia vexillaria*, *Cymbidiums*, *Odontoglossums*, *Dendrobiums*, *Epidendrums*, and *Cypripediums*. Some 600 specimens in all were staged. The leading exhibitors of these were Mrs. F. Q. Ames, North Easton, Mass., and Mr. H. H. Hunnewell, Wellesley, Mass. (fig. 9, p. 23). Smaller, but choice assortments came from all the other leading New England Orchid-growers, including Bayard Thayer, and E. & R. Thayer, Lancaster, Mass.; J. E. Rothwell, Dr. C. G. Weld, and Prof. C. S. Sargent, Brookline, Mass.; C. Lothrop, Esq., North Easton, Mass.; J. S. Bailey, Roxbury, Mass.; and W. P. Winsor, Fairhaven, Mass. Many rare and valuable *Cattleyas*, *Lælio-Cattleyas*, *Odontoglossums*, and other species were shown.

No faded or unsightly plants were allowed to appear in the exhibition during the eleven days it was open. As soon as any plant showed signs of being past its best, it was removed, and loads of fresh plants were added almost every morning. The foliage on the hundreds of Palms (many of them big specimens) was frequently sponged, and everything possible was done to make the exhibits appear inviting; the result being that most of the exhibits were as fine on the closing as on the opening night.

No cut flowers, coloured leaf of stove or greenhouse plants, fruits, or vegetables had any part in this exhibition, which was rather planned and carried out to show people how a flower show should be arranged, and to endeavour to educate people above the formal, stereotyped arrangements newly always seen on such occasions. While only a few varieties of plants were exhibited, the whole space, 210 by 91 feet, was occupied, and the paths were none too large for the perambulation of the crowds which attended. Music was provided by an orchestra in the afternoons and evenings; and a restaurant in the dining-hall on the lower floor was well patronised. Altogether, the opening of Boston's new hall, the finest of its kind, we believe, in the world, was very auspicious, and many of us trust that London may soon possess a similar building. W. Y. Craig, North Easton, Mass., U.S.A. [On p. 23 we give a presentation of Professor C. S. Sargent and Mr. H. H. Hunnewell, to whom the chief share of the success of the gathering was due. Ed.]

NOTICES OF BOOKS.

STRAY LEAVES FROM A BORDER GARDEN, by Mary Pamela Milne Home. With eight illustrations, by F. L. B. Griggs. (John Lane, The Bodley Head, London; and New York.)

HAIR though the words seem, it must be owned that there is little that is new to be found in this book. Not that it is not original, so far as it goes, but that there are already so many similar records by ladies of their thoughts and feelings in a garden. Lovers of flowers and plants are many, but their observations, unless chronicled with real inspiration and adequate knowledge, are not particularly interesting to others than themselves.

In these *Stray Leaves* we have the usual remarks about the seasons, the plants and their names, and habits and surroundings. The following is an extract characteristic of the book:—"Southey admired the Holly-tree very much, and wrote a charming little poem about it. It used also to be called Holme and Hulver; this last is, I believe, a corruption of the French word *Oliver*, as it did duty for Olive branches in old church festivals. The catkins are out in the June now, how pretty they are, like drops of snow caught on the bare brown branches of the saughs! This

word is probably a survival of the Anglo-Saxon 'sealh-sallows,' a name, I think, from the Finnish 'salawa.' 'Cattlings' and 'pussies' the children here call them, and sometimes 'goslings;' 'pussy willow' is the American name. It is odd that the German name should be also Katzechen, or 'little cats.' In Hans Andersen's *Story of the Year* . . . Fairy Andersen says, 'It was a beautiful spring, but the Willow-trees wore woollen mittens over their blossoms, they were exceedingly careful, and that is tiresome.' 'Mittens' is an old Scots term for woollen gloves, and woollen gloves without fingers are called 'Doddie mittens.'

So the author discourses concerning the characteristics of the seasons. Much of her experience has been gained in America, and the book is filled up by chapters at the end about her "Friends in their Gardens," these "friends" being of various stations in life and in widely separated localities. The illustrations are rather pleasing than remarkable; and, to revert again to the text, the frequent allusions to "boy" are scarcely interesting, save to the mother of the young hero. The chronicles of the *Border Garden* would, we repeat, be more charming had they been the first, not the latest of their kind; as it is, they will surely please the large and not too critical public not yet satiated with this style of book. There is an Appendix, with lists of flower names, and of bird names, in different languages, and a vocabulary of the vernacular of the *Border*. These are not specially valuable nor exhaustive, but we are bound to take the information ungraciously as it is humbly offered. "Hoping you will, of your courtesy, gentle reader, give it gentle judgment, remembering it hath been said, the province of a woman is to chronicle small beer."

FLORA BRASILIENSIS. Fasciculus xxxv. Orchidaceæ VI. Expositus Alfredus Cogniaux. Pp. 181—384, tab. 50—81.

ALL things must come to an end, and each succeeding fasciculus of this monumental work may be regarded as a milestone marking of another stage of the seemingly interminable journey to the end of the *Flora Brasiliensis*. Of the part under notice it may emphatically be said that it is well worthy of its predecessors, for it bears on every page the most convincing evidence of the patient and clever work bestowed on it by Mr. Alfred Cogniaux, whose labours on this portion of the monograph have been rendered exceptionally arduous by the immense amount of research and reference necessary to produce such a complete enumeration of varieties, the forms of *Lælia purpurata* and some of the varieties of the *Cattleya labiata* section each including from fifty to one hundred names. The usefulness of the work is considerably enhanced by the enumeration of all published varieties and sub-varieties, but the amount of work entailed thereby is incalculable.

The genus *Epidendrum* is continued, and *Cattleya*, *Leptotes*, *Brassavola*, *Lælia*, *Schomburgkia*, *Sophranitis*, *Elleanthus*, *Sobralia*, *Bletia*, *Cyrtopora*, *Cyrtopodium*, *Warrea*, and *Govenia* dealt with in the same exhaustive manner as that pursued in previous issues, description, all available references, synonyms, habitat, time of flowering, &c., being given.

The greater part of the showier species are well known, and highly appreciated in gardens in Europe where Orchids are grown; and the enumeration discloses a large number of pretty species not known in gardens, but which would find favour if introduced.

The plates are excellently well done to facilitate identification, analytical drawings of the parts of the flowers being given in most cases to the minutest detail. Many of the

subjects are familiar to us, but the singular plant figured as *Laelia Regnelli* is interesting on account of its remarkable structural differences from others of the genus. The plants

L. flava, *L. rupestris*, *L. cinnabarina*, *L. harpophylla*, *Leptotes unicolor*, *L. Panamaensis*, *Brassavola flagellans*, *B. Gardneri*, *B. Martiana*, *B. nevoluta*, *Elleanthus crinipes*, *E. brasili-*

Rodriguezii, *S. yanaperyensis*, *S. pubescens*, *Sophranitis coccinea*, *S. cernua*, *S. Wittigiana*, *S. rupestris*, *S. Rossiteriana*, *Schomburgkia crispata*, and *Warrea tricolor*.



FIG. 11.— NEW RAMBLER ROSE, "QUEEN ALEXANDRA"; COLOUR, PINK WITH WHITE CENTRE.

(Awarded a Gold Medal of the National Rose Society, on July 4, when shown by Messrs. Jas. Veitch & Sons. See p. 30)

illustrated are *Cattleya elongata*, *C. intermedia*, *C. Harrisoniana*, *C. Walkeriana*, *C. velutina*, *C. Warneri*, *C. Eldorado*, *C. violacea*, *C. bicolor*, *Laelia pumila* Dayana, *L. Regnelli*, *L. crispata*, *L. amantia*, *L. longipes*, *L. caulescens*,

ensis, *E. b.*, var. *Hookerianus*, *E. graminifolius*, *Bletia Rodriguezii*, *Cyrtopogon longifolia*, *C. l.*, var. *amazonien*, *Cyrtopodium yanaperyense*, *C. Brandonianum*, *C. charneum*, *Goyenia Gardneri*, *Cyanorechis Arundina*, *Sobralia*

THE BOOK OF ASPARAGUS. By Charles H. G. F.R.H.S.

THIS is one of a series of handbooks on practical gardening being issued by John Lane, The Bodley Head, London and New

York. The author of this manual has had a long experience as a gardener, and is eminently qualified for the task he has undertaken. Recently he has been engaged by the County Council of Cornwall in experimenting on a large scale, with a view to determining the most suitable crops for extended culture in that county, and the best methods of cultivation of those crops. His lectures throughout that county have already borne good fruits. An important chapter in his book is that which is concerned with the cultivation of Asparagus on various soils, good and bad. He is, of course, in favour of soils that are friable, porous, easily worked, and well enriched by manure, and the deeper the better, as then the plant is unimpeded by drought.

Varieties such as Sutton's Perfection and Giant French, Late Argenteuil (wrongly spelled Argenteuil), and Early Argenteuil, the author considers distinct; but he thinks that cultivation has much to do with the so-called varieties, with which remark we are in agreement.

The necessity for sowing Asparagus seed on clean ground is very rightly enforced, the seed germinating irregularly in regard to time, and land foul with weed seeds would give endless trouble to free it from weeds without injuring the small, delicate plants. The seed-bed should be dug in the autumn or early winter, and the surface left as rough as possible. After January, it should be forked over without touching the manure, and the surface left for the weed seeds to germinate. When the weeds appear, it should be harrowed or raked a few inches deep, and again left. If possible, allow a second crop of weeds to spring up, and proceed as before. Work the land so that there are no clods underneath the surface. Sow in March.

In a like careful, thorough manner the cultivator is instructed in every operation involved in the cultivation of the plant.

We gladly notice a tool used in Cornwall for "getting out" drills in which to plant young Asparagus. It is in reality a small spade, rather narrower at the mouth than at the tread, made with a socket set at a conveniently obtuse angle for receiving a straight long handle. With this tool the drills are made of an uniform depth, as deep at the side as in the middle, which is not possible with a hoe.

After cultivation, we find a chapter on forcing, with hints on bundling; a history of the plant, and methods of cooking.

Celeriac comes in for a chapter to itself, and we hope Mr. Hott will get our countrymen to take up the cultivation of this useful winter culinary or salad plant. Some chapters on Scorzoneria, Sea-kale, and decorative species of Asparagus follow.

The Week's Work.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HISSKEY PACE, Esq.,
Prestwood Hall, Loughborough.

Euphorbia (Poinsettia) pulcherrima.—Plants which were struck from cuttings early should be shifted into large 18's, the potting-compost consisting of loam three-quarters, and leaf-soil one-quarter. The potting should be firm, and the plants placed in a pit having a temperature of 60 by night, not necessarily from fire-heat. Afford shade from bright sunshine till fully re-established, then by degrees expose them to the light, and give more air. The objective of the grower should be a dwarf plant and well ripened wood, which will furnish fine large heads of bracts. Continue to propagate the plant by means of cuttings till the required

number is secured, and shake out of the old soil and place in smaller pots the "cut-backs" of last year.

Chrysanthemums.—Recently-potted Japanese and incurved varieties should be carefully afforded water, and after sunny days a heavy syringing of the foliage several times a day. During heavy showers of rain lay the plants on their sides, or the soil may become sodden at a critical season. Tie-in the necessary number of growths after the natural break has occurred, and in the event of black or green aphid appearing on the points of the shoots, sprinkle them in the early morning hours with Tobacco-powder. Shoots of Pompons should be stopped for the last time. The late-flowering varieties of W. H. Lincoln, Princess Blanche, L. Canning, and Niveum, should be permitted to grow without any stopping or pinching, merely thinning the buds when the season is more advanced. Early summer-flowering varieties may now be afforded liquid-manure, in the ratio of one of manure to six of water twice a week.

The Greenhouse.—Hard-wooded New Holland plants being at this season well advanced in growth, may be repotted if this be required. Before repotting any of these plants, loosen the roots at the sides with a pointed stick, doing this with as little injury to the plants as is possible. After repotting, keep the plants in close quarters for a few days, damping the foliage twice a day, and keeping the air moist. Afterwards they should be afforded more and more air, and in a fortnight they may be plunged in coal-ashes out-of-doors, or kept under glass, as may best suit the locality. Winter-flowering Heaths and Epacrises may be placed outdoors in an open situation at the end of the month, if not earlier, and such late-flowering plants as Pimeleas, Aphelexis, and Leschenaultias, &c., which are now out of bloom, may be kept in a house facing north, where they may remain till growth recommences, affording the foliage a gentle syringing daily. Pick off the remaining blooms, and thin out the weak shoots previous to training the plants at the finishing of their growth. The growth of Lapagerias now being at an end, the shoots should be trained previously to flowering, and the plants afforded water at the root as may be required and diluted liquid-manure occasionally.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE,
Bacon, East Baulleigh, Devonshire.

Celery.—The earliest rows will be all the better for another stirring of the soil, and a dusting of the tops with soot at weekly intervals, catching the foliage when moist with dew or rain, the Celery-fly usually making its appearance at about this time. Examine the leaves during the next three months, and remove any parts in which the mining grub is seen, throwing those into a basket for burning. Celery should be planted for succession as ground becomes vacant, making the trenches less deep than those filled with the early plants.

Coleworts.—The first sowing being fit for planting, afford the plants 1 square foot on which to grow. Strew soot or wood-ashes frequently on the later-sown plants, in order to keep green-fly from them. The homiful rain which fell a fortnight ago dislodged many of these, as well as the Turnip-fly, and as a consequence the plants are making progress.

Carrots.—The last sowing for the season may now be made in the south, the land being dressed moderately with soot and quicklime, and afterwards dug one full spit deep, breaking up all the bigger clods in the process. Make it firm by evenly trampling it all over, and sow in shallow drills drawn 1 foot apart. The varieties Model, Early Gem, or Early Horn, are suitable for sowing at this date.

Endive.—Thin out and transplant Endive at 1 foot apart, and make another sowing shortly.

Cabbage.—In northern districts it is usual to sow about the 15th inst., but in Devon the

25th is soon enough, with another sowing made fourteen days later. Sow in shallow drills made at 1 foot apart, away from the shade of trees; and put a net over the bed, raised a foot from the ground, as various kinds of birds are partial to Cabbage-seed.

Shallots and Garlic.—When the tops begin to wither, pull up the bulbs, and place them on a hard, dry path, or on boards, to dry, and after a week's exposure, hang them up in bunches in a cool shed.

Sea-kale.—The dry weather having been injurious to this vegetable in many parts of the country, it will assist growth if a light dressing of salt be afforded the soil between the plants, hoeing the ground afterwards to bury the salt.

Late Broccoli and Sprouts should be planted between, and in some gardens the old Strawberry-beds may be planted without much preparation beyond that required for grubbing up and clearing away the plants and the mulching materials. The land already planted should be well hoed before being earthed up, whilst it is possible to do this.

Peas.—Owing to the long drought, thrips made their appearance in many gardens, and last week I saw a long row of Sutton's Improved Duke of Albany completely ruined by this pest. The recent rains have done much good to the Pea crops. Where the rainfall has been light, afford water copiously twice a week, and a mulch of some kind. Where the rows of Peas stand wide apart, and the intervening space is cropped with low-growing vegetables, the land under Peas gets a little shade, which will have stood the Peas in good stead during the late hot weather. The latest sowings should be mounded up and staked. The points of the haulm of those that have reached the tops of their stakes should be pinched off; and this applies also to Scarlet and other Runner Beans.

THE ORCHID HOUSES.

By H. J. CHURMAN, Gardener to R. I. MEASURES, Esq.,
Cambridge Lodge, Finsden Road, Camberwell.

Miltonia spectabilis is one of the most beautiful of the late-flowering Miltonias, and requires warmer conditions and more sunlight than most of the species to induce it to flower freely; the place our plants succeed best is at the cool end of the Cattleya-house, suspended from the roof. Only sufficient shading is used to protect them from scorching during the brightest hours of the day. The natural colour of the foliage has a somewhat yellow tint, but this is not increased by exposure to light, and the plants do not suffer in any way from exposure to the degree of light necessary to flower them satisfactorily. During the present season the plants are emitting new roots from the base of the growths, rapidly maturing, and the flower-spikes will soon be conspicuous. Any repotting that may be necessary should be done now, and the plants will then quickly establish themselves in the new material, and the flowers will open without any apparent check. This species succeeds best in well-drained baskets, and the potting material should consist of equal portions of fibrous-peat and sphagnum-moss. The plants require an abundant supply of moisture during the summer season, but after they have finished their growth and have flowered, let them be removed to cooler conditions, and kept comparatively dry. *M. Moschiana*, *M. bicolor*, and *M. flavescens* require similar treatment to that advised for the type. The smaller straw-coloured flowers of *M. flavescens* are produced earlier in the season than those of the other species, and repotting should therefore be done earlier. *M. festiva*, the supposed natural hybrid between *M. spectabilis* and *M. flavescens*, is very pretty and distinct. It is somewhat rare, but should be afforded a place where Miltonias, such as *M. candida*, *M. Clovesii*, *M. cuneata*, *M. Regnellii*, *M. Peetersiana* (which is a supposed natural hybrid between *M. spectabilis* and *M. Regnellii*), and the rare and beautiful

M. Bluntii Lubbersiana, should be grown in pots or pans, using the compost already described, and should be afforded a light position at the warm end of the intermediate-house. During the growing season the plants require the same treatment as recommended for *M. spectabilis*, but they may be syringed overhead two or three times a day in warm, bright weather. When growth has finished, treat the plants in the same manner as *M. spectabilis*. Care must be taken to keep the above sections of Miltonias free from insect-pests. The greatest pests are thrips, which attack the leaves in a very young stage. If once they establish themselves in the centre of the growth, they are very difficult to dislodge, and may cause permanent disfigurement in a very short time. Where thrips are observed, dip the plants in XL-All wash, which must be diluted according to the directions on the bottle. The house should also be fumigated at regular intervals. The heavy rains during summer are apt to dislodge thrips from outside vegetation, and some being conveyed to the interior of the house through the rain-water pipes, get distributed upon the plants when dipping them. It is a good plan to fumigate immediately after summer rains.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to the CHAS. TENNANT, The Glen, Inverlathie, Peeblesshire.

Figs.—When the first crop of fruit has been gathered, recommence to syringe the trees twice daily, and spray the borders and other surfaces as advised before the fruit commenced ripening. Thin out the fruits in degree according to the crop, removing those nearest the base of the shoots. Stop and tie the growths as they advance, removing those not required, and regulating those retained so that they may receive the benefit of light and air. Trees that are planted in borders of limited extent, having good drainage, will require abundance of water at frequent intervals. On each occasion use weak liquid-manure from warm tanks, or guano at the rate of 1 lb. to 20 gallons of water. Before finishing the watering, I generally afford the border a good sprinkling of Thomson's Vine and Plant-manure. This manure contains a combination of elements, as does the liquid-manure from stables, &c., and it is safer than simple salts, such as sulphate of ammonia, nitrate of potash, and nitrate of soda, which promote too much leaf growth in the Fig. Maintain a circulation of air in houses where the crops are ripening, and keep the atmosphere warm and rather dry. Avoid wetting the fruits, but an occasional damping of the house will benefit the foliage. A moderate degree of moisture in the soil is necessary for ripening Figs, but excess must be avoided. Trees in pots for early forcing should be syringed occasionally, and afforded the necessary supplies of water and liquid-manure.

Cucumbers.—The plants in the Cucumber-house will now be growing and fruiting freely. Spray the plants in sunny weather at least twice a day, and stop the shoots as growth proceeds, tying the line to the trellis. Plants in bearing will require to be afforded liquid-manure three times a week. As soon as the roots show themselves through the compost, afford a top-dressing of loam, with rotten dung well incorporated. This compost should be made in readiness some days before it is required. Make fresh sowings as required, remembering that it is prudence to be provided with surplus plants in pots in sufficient numbers to meet any probable requirements. Plants that have been fruiting for some time, and are nearly exhausted, should be turned out, as it does not pay at this season to keep those which have lost their vigour.

Setting Melons in Frames.—During moist, warm weather the flowers do not set freely, especially when the plants are growing strongly. A moist atmosphere, closeness, and crowding the foliage or shoots are adverse to a good set. Keep the shoots rather thin by removing every alternate lateral whilst quite small. Removing them after they have grown

large often causes gumming and canker. The laterals retained generally show fruit at the second or third joint; if not, stop them at the second joint, and the sub-laterals will show fruit freely, when water should be applied sparingly, taking care not to wet the surface of the bed any more than is necessary. Place linings of hot dung against the sides of the frames; this will raise a gentle heat, and allow of a small volume of air being admitted day and night. Fertilise the flowers when fully expanded, and stop the shoots one joint beyond the fruit at the same time. Admit air freely when weather permits, increasing the ventilation at 70°, allowing it to rise to 80° or 85°, at which keep it throughout the day, and closing at 80°. When the plants have set two or four fruits each, and these are of the size of a pigeon's egg, commence affording water by sprinkling the foliage at closing time, always keeping the water from the necks of the plants. In hot weather afford plenty of water twice a week, but once in the same period will be ample in dull weather. When the fruit is advanced for ripening, keep the bed well lined with hot dung or grass-mowings, and ventilate the frames freely.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltalloch, Edinburgh Park, Easter.

Spanish Iris.—Clumps showing signs of exhaustion will be benefited by being lifted after flowering is over, planting the bulbs in some other part of the garden. The plant likes a moderately light soil, and one not too wet during the winter, and as it is not prudent to disturb this section of the Irises often, the ground should be well prepared, affording it a liberal dressing of half rotten manure if it be poor; and unless the soil is sandy, road-grit or coarse sand should be incorporated with it. The bulbs should be kept out of the soil but for a short time, the new growth starting quickly after the flower-stems have died down. While they are ornamental as clumps in mixed borders, unless the clumps are labelled in some manner, the bulbs are liable to be disturbed during the resting time. I prefer to plant them in rows behind the espalier fruit-trees separating the vegetable quarters, on slightly raised ground by the side of the alley or narrow path, and in this position on heavy loam they thrive very well. If not shaded, and they are planted a little higher than the surrounding ground, the plants get the baking or drying necessary for the ripening of the bulbs, and essential for their flowering. A similar position will also suit the English Iris, but as these flower at a little later date than the Spanish, any necessary planting will also follow later. The English Iris are also very suitable for growing in pots.

Dahlia.—These will now be growing apace, and if the plants were of a good size when planted, some disbudbing of the shoots should be done where large fine blooms are wished for. The plants should be forthwith staked, and the main shoots made secure. It is a prudent course to put several stakes to a plant to make them quite secure against wind, and admit sunlight to the inner growths. The stakes should be high enough to afford support, but not to be themselves prominent objects. The plants should be liberally treated in regard to manure and manure-water.

Carnations.—These plants in beds or borders, unless "coil" stakes are used, should have their flower-stems fastened to thin painted sticks, and for large blooms the flower-buds should be freely thinned. When in flower, some slight protection against hot sunshine is needed, or the blooms will endure but for a short period of time, and for this purpose light tiffany stretched on two wires and secured to posts placed at each corner of the bed or border is as good as any.

Wallflowers, and other Spring-flowering Plants.—*Myosotis*, *Linum catharticum*, and *Silene*, if sown at the time advised, will now be large enough for transplanting into nurse-beds, in rows at 1 foot apart, and 6 or 8 inches from

plant to plant in the rows. If the seedlings are left in the seed-bed, thin them to about 6 inches apart. The early planting of Wallflowers is necessary if really good bushy plants are desired, for small plants make a poor display in the spring, and during the winter they make little or no growth.

General remarks.—Take cuttings of choice Antirrhinums. The rain which fell last week was very acceptable to the gardener, and although the storm destroyed many of the flowers in the herbaceous perennial border, it saved many more which must have perished if the drought had lasted much longer. Remove spent flowers; keep the soil stirred. Asters, Stocks, and early *Chrysanthemums* give promise of a fine display. Bedding plants which have not yet been allowed to flower are much improved since the rains, and are going to flower profusely.

THE HARDY FRUIT GARDEN.

By C. HERON.

Layering Strawberries.—The time has now arrived when layering must be carried out, if good plants for forcing or for making new plantations are to be obtained. Providing Strawberry plants were planted last autumn, specially for the production of runners, the blossoms of which have been pinched off, and water afforded occasionally during the dry weather, they should be numerous layers ready at this date. For cultivating in pots the layers, if placed on 3-inch pots, will be fit for the fruiting-pots as soon as the layering-pots will throw roots, that is, at the end of the present month or early in the next at the latest. For forming permanent beds, or for treatment on the annual system in the open, the middle of August will be soon enough to sever them from the mother plants. The latter method should be adopted, on a small scale at the least, in every garden where early fruit is required, as fruit can be obtained thereby quite ten days in advance of that from plants of the same variety that have been in bearing for several years. But and layering-books should be got in readiness as soon as possible, it being well to have everything needed in readiness for a start. The soil used in the layering-pots should be a rather adhesive loam; that which has grown a crop of Melons, together with some spent Manchester-hed manure, will answer very well. Let it be sifted through a sieve having an "inch mesh, and use the strings for placing at the bottom of the pots. The soil should be pressed firmly, and an inch deep below the rim, so as to allow of plenty of space to hold water. The pots may be plunged in single or double lines in alternate alleys, and to the extent of half their depth. The strongest plant on a string should be selected for the layer, and the others removed. If the weather is dry, afford water as soon as a number of layers are laid, and keep the soil in the pots uniformly moist. When well rooted remove the layers, and stand them for a few days in a shady place. Let no secondary runners remain on the young plants.

Affording Water to Peach Borders.—The fruits of Peaches, Nectarines, and Apricots are, in the case of early varieties, approaching ripeness. Although some rain has fallen recently, it in quantity is insufficient to reach the roots of the trees, more especially those of wall fruit-trees, and while the fruits are still capable of growing in size a heavy application of water should be afforded the borders once or twice a week. Where the trees are heavily cropped, liquid manure may be afforded alternately with clear water.

CONVICTIONS FOR FERN STEALING.—Two men, named WILLIAM KING and BENJAMIN HALL, were recently sentenced at Ashton County Police Court to three months' imprisonment for stealing ferns from the gardens of C. T. BRADBURY, J.P., at Riversdale, on June 28.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 13.	Manchester Royal Botanical and Horticultural Society, Rose Show.
TUESDAY, JULY 16.	Royal Horticultural Society, Exhibition and Conference on Lilies at Cliswick (2 days). Kiddinminster Horticultural and Rose Show.
WEDNESDAY, JULY 17.	National Rose Society's Northern Exhibition at Ulverston, in connection with the North Lonsdale Rose Society, Cardiff and County Horticultural Society's Show (2 days).
THURSDAY, JULY 18.	Royal Botanical Society, Meeting.
FRIDAY, JULY 19.	National Carnation and Peacock Society, Exhibition at Crystal Palace.

SALES.

FRIDAY NEXT.—Imported *Odontoglossum crispum*, in fine condition; Cattleyas, *Oncidium*, &c., at Protheroe & Morris' Rooms.—The beneficial interest in lease of Edgewickbury Farm, Edgeware.—Mr. J. B. Slade, for Protheroe & Morris, at the Mart, at 2 o'clock.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Cliswick—63.4.

ACTUAL TEMPERATURES.—

LONDON.—July 10 (6 P.M.): Max. 52°; Min. 57°.
July 11.—Fine, warm.
PROVINCES.—July 10 (5 P.M.): Max. 77°; (Home Counties); Min. 57°; N.E. Scotland.

Those who have been witnesses of the manner in which lads from the village school-room at Harpenden can pick out and identify from a heap of hay, put before them for the purpose, practically all the fragments belonging to the particular species constituting the sample, must have looked with an envious eye at the keenness of vision and accuracy of determination possessed by these trained though untutored lads. It will be remembered that there is a large number of grass plots at Rothamsted, each treated with a different kind of manurial agent, with the exception of one or two control plots left in their natural condition. At stated intervals a careful analysis is made of the hay grown on these plots, with a view of ascertaining what plants are favoured by particular manurial combinations, and what are unaffected or injured by them. This analysis is made by the lads aforesaid, who separate each little fragment of hay and allot it to its proper species, so that, at the end of the analysis, few indeed are the morsels that are left undetermined. Most professional botanists, we venture to say, would be quite unable, without preliminary training, to approach the accuracy and rapidity with which the separation is

thus carried out. Speaking generally, we may add that the separators are not always able to say why they select this or that scrap, as it seems to be chiefly a matter of accurate vision. When, however, the results are checked by the more critical methods of the botanists, it is found that the work of the lads is surprisingly correct. In like manner, the former experiences no difficulty in distinguishing the young seedling plants of Wheat, Barley, Rye, or Oats, which the ordinary botanist, unless his attention has been specially directed to the subject, would not find it easy to do. What the Rothamsted lads or the farmer compass by the eye alone, Dr. MARSHALL WARD now instructs his pupils to carry out by more critical methods. His book, entitled, *Grasses, a Handbook for use in the Field and Laboratory*, published by CLAY & SONS, Ave Maria Lane, is intended to furnish students with a practical handbook, by the assistance of which they may recognise the grasses of the field, study their internal structure, and co-relate that with the conditions under which the plants grow. In successive chapters the outward conformation and the classification of grasses are first dealt with. The internal structure or histology is then reviewed, and another mode of classification given, founded on the anatomical conformation of the leaf. Grasses in flower and fruit are treated in a similar manner, a third system of classification being likewise given from this point of view also.

We have thus three systems of classification from three more or less different standpoints, which seems a purely artificial arrangement, useful indeed for practical purposes, but relatively imperfect from a scientific point of view. Glancing through the little volume, we find many "characters" or points of distinction mentioned which are not included in the ordinary text-books; such, for instance, as the form of the leaf-shoots when seen in section, and other matters which betoken careful personal observation rather than systematic compilation from other books, which is what we are usually furnished with in books on wild plants.

The chapter on anatomy and histology is particularly valuable, as we do not know any book in English that furnishes so many structural details. The relation of structure to functions and to external conditions of soil, climate, &c., is a fascinating study for the student, and the results should have great practical value.

Chapter IX., in which the forms of the so-called "seeds" are described and figured, will be valuable to seedsmen and others, to whom the identification of the "seeds" of grasses is a matter of cardinal importance.

If a second edition could be accompanied by an atlas of plates showing the characteristic mode of growth of the several grasses, and their general appearance, we should have an "up-to-date" grass manual of the utmost utility. In the meantime, we think students are under such a great obligation to Dr. MARSHALL WARD for what he has already given us, that we heartily commend his little book to their notice; the more so as it is usefully illustrated, and possesses an adequate index.

OUR ROSE ILLUSTRATIONS.—The illustrations of Roses we publish in our present issue, taken from exhibits at the National

Rose Society's Show, in the gardens of the Inner Temple, of which we gave a full report last week. Fig. 11 represents the new pink-flowered Rambler Rose, named after Her Majesty Queen ALEXANDRA, and shown by Messrs. JAMES VEITCH & SONS, Chelsea. As we have already stated on p. 11, this variety is the result of a cross between Turner's Crimson Rambler and *Rosa multiflora simplex*, and it appears to possess much the same habit as Crimson Rambler, but has flowers of pink colour. The variety was recommended a Gold Medal by the National Rose Society's judges, and it received the notice of Queen ALEXANDRA. The illustration on p. 31, shows a group of twelve varieties of Roses, exhibited in vases, by Messrs. HARKNESS & SOX, Bedale and Hitchin. It will be seen from our report on p. 17, that the varieties "Mrs. W. J. Grant, Alfred Colomb, and Madame Cusin, were grand in this exhibit, which had a very glorious effect." Those who were present and saw the exhibits of Mr. PRUXCE, and of Messrs. HARKNESS, in classes nine and ten, could hardly have failed to recognise the better effect produced by staging the blooms in this way, rather than in flat boxes arranged in lines, where the flowers are brought down to a level, and natural grace is displaced by a flat monotonous arrangement. The beauty of the single flowered Roses, and their usefulness for decoration, is shown by the tasteful arrangement exhibited by Mrs. O. G. ORPEN, see fig. 11, in a class open only to ladies, and which was awarded 1st prize among nine competitors. The varieties shown are those of *Rosa macrantha* and *Mosehata alba*, the flowers of which are almost white, but have a delicate blush tint. It is noteworthy that when most of the Roses in the exhibition showed evidence of suffering from the intense heat in the tents, these fragile-looking blossoms appeared the freshest. The remaining photograph, see fig. 13, shows a 1st prize collection of twelve blooms of the Tea Rose Mrs. Edward Mawley, a very beautiful variety named in compliment to the wife of our valued correspondent Mr. MAWLEY, one of the Secretaries to the National Rose Society. The exhibit obtained 1st prize for the best twelve blooms of a Tea or Noisette, and was shown by Messrs. A. DICKSON & SONS, Newtownards, Ireland. Our publisher begs us to say that copies of our Rose Supplement can still be had on application.

PLEASANT GATHERING AT NORWICH.—On Thursday, July 4, Messrs. DANIELS BROS., LTD., Norwich, entertained at dinner upwards of 200 of the leading gardeners in the Eastern Counties. The occasion was that of the Norwich Rose Show, which was this year held in close proximity to the nurseries. The visitors, after inspecting the show, visited Messrs. DANIELS' trial grounds, and were there shown upwards of 100 of the newer varieties of Sweet Peas, grown in separate rows, and with the names attached to each row; after that a visit was paid to the culinary Pea trials, of which there were noticed over 150 varieties; but owing to the lateness of the season only about eighteen or twenty of the earliest ones were in full character. The visitors afterwards walked round the nursery, where there are fine breadths of fruit-trees, and a collection of zonal Pelargoniums in full flower. At 6 o'clock the company assembled at dinner, and the chair was taken by Mr. CHAS. DANIELS, managing director; supported by Mr. W. ROGERS SMITH, secretary; Messrs. WATSON, Letton Gardens; Mr. Field, Ashwellthorpe; Mr. CLEMENTS, gr. to Lord BATTERSEA; Mr. MUSK, gr. to Lord de RAMSEY; Mr. BATCHELOR, Catton Park; Mr. JONES, Carrow House; and about 150 others.



FIG. 12. GROUP OF FINEST VARIETIES OF ROSES EXHIBITED BY MESSRS. HARRISS AND SONS.
(From a photograph taken by our artist at the "Temple" Show of the National Rose Society, July 1, 1901.)

"BOTANICAL MAGAZINE."—The plants figured in the last part of this publication, edited by Sir JOSEPH HOOKER, are—

Rhododendron cilicidalys, of Franchet, tab. 7782. A Chinese species allied to *R. formosum*, Kew.

Chelempsis moschata, of Miquel, tab. 7783. A Japanese and Chinese herbaceous plant, similar in appearance to our *Melittis Melisso-phylum*, but differing from it in structural characters. Introduced to Kew by A. K. BULLY, Esq.

Iris chrysantha, of Baker, tab. 7781. A fine self coloured yellow Iris of the bearded section, introduced by M. VAN TUBERGEN, but of uncertain source.

Cyanotis hirsuta, Fischer and Meyer, tab. 7785. A Telescentif-like plant, with linear ciliate leaves, pinkish flowers, and blue stamens. It has globose tubers about the size of a Chestnut, which are eaten by the Abyssinians.

Impatiens chrysantha, of Hooker, f., tab. 7786. A yellow flowered annual species; native of the Western Himalayas. Kew.

THE STOCKPORT AND DISTRICT CHRYS-ANTHEMUM SOCIETY has just issued a schedule of prizes to be offered for competition on November 11. The show will be held in the Volunteer Armory, and will remain open for three days. The Secretaries are Messrs. W. RALPHS and J. M. HAWKES, St. Peter's Square, Stockport.

AN HEROIC GARDENER.—A courageous attempted rescue of two persons from drowning, by Mr. J. CAVANAGH, gardener, of Blarney, co. Dublin, deserves to be recorded. A little girl was taken off her feet by the ebbing tide, and a governess who attempted to save her was likewise carried away, and Mr. CAVANAGH, seeing their danger, ran 200 yards down to the beach, and plunging in just as he was, he managed to bring them to the shore, but unfortunately life in both cases was extinct.

ROYAL NURSERYMEN.—Messrs. WILLIAM PAUL & SON, of Waltham Cross, who for many years held the appointment of Rose-growers to her late Majesty Queen VICTORIA, have now been appointed by Royal warrant Rose-growers to His Majesty King EDWARD VII.

ROYAL SEEDSMEN.—The KING has granted Messrs. JAMES CARTER & Co., of 237, 238, and 97, High Holborn, London, the warrant of appointment as seedsmen to His Majesty.

—The *Times* of July 6 announced that Messrs. SUTTON & SONS, who have been seedsmen to the Crown for many years, have now been appointed by Royal Warrant seed merchants to His Majesty King EDWARD VII.

ORCHID CULTURE IN ENGLAND AND IN FRANCE.—A writer in the *Revue Horticole*, dealing with the Orchids staged at the last Temple Show, considers that the French Orchids exhibited at the Tuileries Show in Paris were superior in point of culture to the English-grown plants, but that the British collections were superior in "richesse des tons."

STOCK-TAKING: JUNE.—The Trade and Navigation Returns for the past month do not afford much encouragement, there being a lessening of the values of both imports and exports, though both are easily accounted for. Imports have decreased by £295,209, and the value of our exports has decreased by £2,150,911, as compared with those for June, 1890. Given the factors of actual warfare and the pressure in the political atmosphere, and

the figures quoted are easy of understanding. The imports for last month foot up at £41,711,038, against £12,016,307—decrease £295,209. The following figures are extracted from the "summary" table usually quoted here:—

IMPORTS	1890.	1901.	Difference.
	£	£	£
Total value	42,056,507	41,711,038	-345,269
(A) Articles of food and drink—dairy	14,226,456	14,141,343	-85,113
(B) Articles of food & drink—dittable	3,164,530	2,582,721	-582,018
Raw materials for textile manufactures	4,167,522	5,529,694	+1,362,172
Raw materials for smelting, min. prod., and manufactures	6,298,353	5,671,081	-627,272
(A) Miscellaneous articles	1,378,167	1,329,834	-48,333
(B) Parcel Post	2,054	78,797	+76,743

The reader will find the "differences" in the table connected with the imports of fruit, roots, and vegetables of even more than ordinary interest:—

IMPORTS	1890.	1901.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw	681	2,004	+1,323
Apples	16,209	24,004	+7,795
Apricots and Peaches	2,974	2,076	-998
Bananas—bunches	121,816	197,116	+75,300
Cherries	113,874	121,167	+7,293
Courts	6,055	1,990	-4,065
Cucurbits	16,574	11,990	-4,584
Grapes	457	680	+223
Lemons	743,990	163,303	-580,687
Nuts—Almonds	2,019	2,424	+405
Others—of all fruit	41,188	53,965	+12,777
Oranges	182,620	182,577	-43
Pears	315	983	+668
Plums	30	25	-5
Strawberries	24,652	28,304	+3,652
Unenumerated raw	1,583	11,297	+9,714
Fruits, dried			
Currents, home prod.	45,374	26,429	-18,945
Raisins, ditto	18,749	12,388	-6,361
Vegetables, raw			
Onions	475,918	182,583	-293,335
Potatoes	1,533,300	1,570,064	+36,764
Tomatoes	425,632	160,738	-264,894
Vegetables, raw, un-enumerated	48,027	415,332	+367,305

The total imports for the past six months are placed at £262,506,790, against £255,656,999, or an increase of £6,849,791. Of course, reverting for a moment to the decrease on the month, it must be understood that values are frequently affected as well as bulk; but these are matters not strictly in any way either horticultural or agricultural. Passing now to the—

EXPORTS.

We come face to face with the great industries of the country, some of which have to face competition on the part of the United States and Germany. That great alterations will have to be made in some of our business modes is admitted to be true; also that some are already made, and others are about to be made. Manufacturers are busy with labour-saving machinery; and more consideration is now bestowed on the tastes, habits, and customs of foreign buyers, and the belief is getting firmer hold of capitalists, manufacturers, and traders that at the very least we shall hold our own the world over by-and-by. The exports last month reached a total of £22,111,121, against some £21,895,335 for the same

period last year—showing a decrease of £2,150,911. In the past six months a loss of £5,580,366 has to be recorded, the figures being £114,376,764 for the first six months of last year, against £138,796,398 for the same period in the present year of grace.

ROYAL GARDENERS' ORPHAN FUND.—Her Majesty Queen ALEXANDRA has graciously consented to continue the patronage to the Royal Gardeners' Orphan Fund, which Her Majesty formerly extended to the Institution as Princess of Wales.

TREES AND SHRUBS.—Messrs. HOUGHTON, MIFFLIN & Co., Boston, U.S.A., have arranged to begin during 1901 the publication of plates, accompanied by brief descriptions, of new or little known trees and shrubs. The work will be edited by Professor C. S. SARGENT, the author of the *Silva of North America*, and the Director of the Arnold Arboretum of Harvard University, with the assistance of a number of specialists; and the plates will be reproductions of original drawings made by Mr. C. E. FAXON, whose work is familiar to the readers of Prof. SARGENT'S *Silva* and *Garden and Forest*. The material which will serve as a basis for this work will be derived largely from the living collections and herbarium of the Arnold Arboretum. The book will not be confined wholly to North American plants, but will include also the woody plants of other regions, especially those of the northern hemisphere, which may be expected to flourish in the gardens of the United States and Europe, and those of special commercial or economic interest and value. The work will be published in parts at irregular intervals. Each part will contain twenty-five plates, and a volume will consist of four parts, of which it is hoped that at least two will appear each year, the first in the fall of 1901. The parts will be sold separately. A title page and index for each volume will be furnished with the fourth part.

THE TEMPLE SHOW attracts attention on the Continent as well as here. The current number of MOLLER'S *Deutsche Gärtner Zeitung* contains a freely illustrated account of the exhibition.

BATTLE ABBEY.—Owing to the death of the Duchess of CLEVELAND, this estate will shortly be sold.

ARAUCARIA EXCELSA.—Among the more cheerful green foils to floral decorations in apartments and shop windows, and even on the eills of windows, during the summer season, we would recommend this handsome Conifer. The habit of the plant is compact, the tiers of branches being separated by only 4 to 5 inches of stem, which is densely clothed with needles, and the branches possess a pleasing semi-drooping pose. With ordinary care the plant endures for a long time in a room during the warmer months. If much gas is burnt it injuriously affects the plant.

LEEDS PARKS.—We understand that Mr. A. J. ALTSOP, formerly head gardener to Viscount PORTMAN, has been appointed Superintendent of the public gardens of Leeds. There were no fewer than 218 candidates for the post.

MOTOR CARS AND STRAWBERRIES.—It will doubtless be of interest to purchasers of the luscious "English-grown" Strawberries from Messrs. KEARLEND MOLE to learn that the fruit, which finds so ready a sale at the well-known fruiterers in the Crescent, is conveyed direct to the shop from Farndon day by day in a motor van. The utilisation of this new means of conveyance for the carriage of such a perishable product as ripe Strawberries is the best.

possible proof of the wisdom of the contention of automobilists that for moderate distances from great centres the motor van, car, or waggon is invaluable, serving the purpose to which it is put most effectually. By the system adopted with regard to the transportation of the Farnon fruit direct to the city distributor, the Strawberries avoid the injurious handling necessitated by railway conveyance; and what this means, can be understood by remembering that the fruit would be loaded on to carts, wheeled to the station, unloaded direct into the railway waggon or on to trucks prior to being stowed on the waggon, run through with the incidental jars of a railway

great amount of material in this country which required codifying, and that since the London conference on similar lines it was advisable that the work should be done without much delay. The feeling has been that what was accomplished in London was but a starting point of what might be done in America. It will be recalled that the suggestion was thrown out during the conference in London that a similar event could, with advantage to all concerned, take place at some convenient point in America. The matter has not been allowed to drop, and at the suggestion of influential horticulturists and investigators the Horticultural Society of New York has

urns, is neutral to reagents, but shaking the urn, or introducing any foreign substance, renders it acid. The zymose which takes the active part in the digestion, must be regarded as a pepsin rather than as a trypsin. *Biol. Centrblatt.*, 21, 23 (*Pharmaceutical Journal*).

CHANGE HERE FOR THE WELWITSCHIA.—An interesting incident in connection with *Welwitschia mirabilis* is recorded in the *Deutschen Rundschau für Geographie und Statistik* (22nd year, 5th part), by our correspondent Herr KARL DINTER, the Superintendent of the Station Brakwater, near Windhoek, in German South-west Africa. While Herr



FIG. 12.—GROUP OF TWELVE BLOOMS OF ROSE "MRS. ED. MAWLEY" EXHIBITED BY MESSRS. ALEX. DICKSON AND SONS. (From a photograph taken at the "Temple" Rose Show, July 1. See p. 20.)

journey, unloaded from the railway van into carts or trucks, which in the latter case necessitates extra handlings, and finally arrives at the store to be sold. As it is, the baskets are loaded on the motor car at the Strawberry beds, and are delivered into the hands of the shopkeeper. This trial will doubtless lead to a wide adoption of the system throughout the district. *Liverpool Journal of Commerce*, July 8, 1901.

AN AMERICAN HYBRID-CONFERENCE. What it is hoped may be a very material contribution to American horticultural knowledge should be the outcome of a decision taken by the Horticultural Society of New York at its meeting recently. *American Gardening* tells us that the society, on the suggestion of the council, has instructed that body to take steps towards the holding at some future time of an international conference on hybridisation as applied to horticulture. It has been felt by American horticulturists that there was a

decided to take the initiative in this way. The possibilities of gathering together the results of economic hybridisation as practised in America should present a fascinating field, and it is hoped that from this preliminary announcement, those who can lend their aid to this scheme will not fail to do so. The council of the society will meet very shortly for the purpose of elaborating a plan of action, which will be upon the broadest lines possible, as far as to insure universal co-operation.

DIGESTIVE SECRETION OF NEPENTHES.—A series of experiments carried on by the late M. CLAIRIX on two species of *Nepenthes* in their native country, Java, seems to have set at rest the controversy respecting the digestive properties of the fluid contained in their pitchers. He states that the bodies of insects found in these urns are more or less completely digested, and that not by the agency of microbes, which were excluded during the experiments. The fluid, while still in the

DINTER was botanising for a few weeks in February, 1900, along the desert near the Swakopmund Windhoek railway, he reached the station Upper Kan, so called, but very inconveniently, to distinguish it from Lower Kan. The upper station is the only point on the railway which traverses the habitat of one of the most wonderful plants of the world (*Welwitschia mirabilis*), the original mention of which was made in our own columns on January 26, 1861, p. 75, 1007. This highly interesting plant grows in a narrow tract extending from Walvischbay in the south to Cabo Negro. At this latter place the plant was discovered in 1860 by the late Dr. FRIEDRICH WELWITSCH, and it was named by SIR JOSEPH HOOKER in his honour. SIR JOSEPH HOOKER tells us in his memoir of this plant, that when WELWITSCH first discovered it, and soon afterwards learnt its nature, as he knelt before it on the desert sand, in his astonishment he could scarcely believe that it was not a figment of his imagination. When Herr

DINTER reached Swakopmund in his wanderings, he had the opportunity of persuading Major POPHALL, the railway engineer, to alter the inconvenient name of the station to "Welwitsch." His suggestion was duly considered, and before many months had passed, the change of name was approved by the Imperial Government, and the station is hereafter always to be known as Welwitsch. The news will be received by all the botanical world, and more especially in Austria, with great satisfaction. WELWITSCH was born in Maria Saal on February 25, 1806, and died in London on October 20, 1872. He worked with unremitting energy for five years on the flora of the Portuguese possessions on the west coast of Africa. His tomb in Kensal Green Cemetery, where he was buried on October 24, 1872, is decorated with a Welwitschia in relief, and runs:—"FREDERICUS WELWITSCH, M.D., Botanici eximius, Floræ angolensis investigator principis, nat. in Carinthia, 25 Februar., 1806, ob. Londini, 20 October, 1872.

ICONES SELECTÆ HORTI THENENSIS.—This, as we have before stated, is a series of 8vo illustrations of plants cultivated in the garden of M. VAN DEN BOSSCHE, of Tirlenont. The representations are excellent, and the text, which is supplied by Dr. EM. DE WILDEMAN, of the Brussels Botanic Garden, is so conscientious and accurate, that it will be of great service to botanists. We have before us the third and fourth fascicles of the second volume, and the plants figured will be enumerated in our list of "Plant Portraits."

ERICA STUARTI.—Mr. LINDSAY kindly sends us specimens of a plant gathered in Comemara, during an excursion to that district, of the Scottish Alpine Club in 1890. It is named after Dr. STUART, of Chilnside, Berwickshire, who found it growing in proximity to E. Mackaiana. This last-named plant is considered by some to be only a variety of E. tetralix. The present plant also looks very like E. tetralix, but differs from it, the hairs of the stem not being gland-tipped, and the leaves are almost entirely destitute of hairs. The flowers are in rounded, somewhat secund clusters. The oblong acute sepals are ciliate at the margins, and about a third of the length of the pink corolla. The corolla-tube expands above, and then contracts abruptly into a short limb, whose oblong or rounded lobes are inflexed. The flowers are protogynous, the stigmas protruding from the tube of the corolla. The anther-lobes are purplish-brown, prolonged at the base into small whitish tails. From the general appearance and the shrivelled condition of the anthers, the plant has the appearance of a hybrid.

FLOWERS IN SEASON.—MESSRS. KELWAY & SOSS, Langport, send us flower-spikes of Delphiniums of great excellence, of which we make mention of the finer varieties, viz.:—Gen. Baden-Powell, single-flowered; Cerulean Blue, a long spike, and flowers of 1½ inches in diameter; Blanche Fitzmaurice, also single-flowered, rather brighter than the former; Lilla Mayo, semi-double, a light blue and violet flower, a large spike and flower; C. B. Fry, a semi-double flower, with outer petals of a deep shade of blue, and inner petals of a lilac tint; Imperial Majesty, slightly double, in colour royal purple, flower spike short; Clara Stubbs, single-flowered, bright blue in tint, a telling flower; Seneca, a semi-double flower, the lower petals of which are bright blue, and the inner ones of a deep violet tint; and The Queen, single flower of large size, blue. We think that no border of hardy herbaceous perennials is complete without these splendid flowers. For planting by

themselves in beds they are not so suitable, the flowering of the plants being of very short duration, and ugly gaps are apt to occur. The plants produce good effects planted on the banks of lakes and streams in good-sized clumps, the contrast of the blue spires of bloom with the level surface of the water being striking, and in such situations when the flowering season is over, they are not greatly missed.

EIGHTEENTH CENTURY HORTICULTURAL MEDAL.—A medal was struck in the year 1700 in honour of AGNETA BLOK, for growing Pineapples in her grounds at Vyverhof, near Amsterdam. This medal was struck in silver and in copper. M. VAN HELTHEM saw one in 1826 in the possession of M. DORNICK DE DEVENTER, member of the States General of Holland. On one side is the portrait of a lady with the inscription: AGNETA BLOK—Flora lattava; on the reverse, a woman in an antique dress, her bust bare, and supporting on her arm a horn of plenty in the middle of a garden of flowers. Beside her is a pot with a Pineapple plant with ripe fruit, and another pot in which is growing a Meloeacetus. Above the medal may be read: *Vijverhof*, and on the rim, *Fecit arsque laborque quod natura negat*, MDCI. We extract this from the *Revue de l'Horticulture Belge*, who asks if other examples of the medal are known?

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—MR. JOHN GREGORY, Secretary, desires to inform our readers that a meeting will be held at the Sunflower Temperance Hotel, on Tuesday evening, July 16, when a paper will be given by Mr. MASLEY on "Winter-Flowering Pelargoniums."

NEWLY PUBLISHED BOOKS.—Among the works on our table awaiting notice are:—*Flowers and Ferns in their Harms*, by MABEL OSGOOD WRIGHT (MACMILLAN & Co.); *A Garden in the Suburbs*, by MRS. LESLIE WILLIAMS (JOHN LANE); *Fields, Factories, and Workshops*, by PRINCE KRUPOTKIN (SWANSONSSENSCHEIN & Co.); *La Mosaiculture Pratique*, by ALBERT MAUMÉNE (S.L. Rue de Grenelle, Paris); *The Story of Wild Flowers*, by the Rev. Professor HENSLOW (GEORGE NEWNES); *Flowers and Gardens*, by FORBES WATSON, edited by the Rev. Canon ELLACOMBE (JOHN LANE); *Wall and Water Gardens*, by GERTRUDE JEKYLL (GEORGE NEWNES); *The Art and Craft of Garden Making*, by T. H. MAWSON; Second edition (BIVISFORD).

PUBLICATIONS RECEIVED.—Appendix to the Report of the Minister of Agriculture, Ottawa, Experimental Farms, Reports of the Director, Agriculturist, Horticulturist, Chemist, Entomologist, and Botanist, Poultry Manager, Supt. Experimental Farm, Nappan, N.S., and Horticulturist, Nappan; and of the Supts. of the Experimental Farms of Brandon, Man.; Indian Bend, N.W.T.; and Agassiz, B.C., For 1900.—A Paper on "The Narcissus," read at the Gardeners' Institute, Darlington, May 2, by Mr. B. S. Beckwith.—*West Indian Bulletin*, Vol. II., No. 2. Contents:—Agricultural Conference, 1901 (continued); Bush Fires, Rubber Planting, Marine Resources, Pineapples, and Cacao Drying.—*Michigan State Agricultural College Experiment Station, Horticultural Department. Report of South Haven Sub-station.* With the exception of Cherries and Grapes, all kinds of fruits on trial here heavily during the past season. Early Plums and Peaches were badly affected during the middle and latter part of summer by rot, induced by unusually heavy and protracted rains, which occurred during that period. . . . Spraying has been attended by unusually good results, especially in the control of the leaf-eater of the Peach, and the scale and codling-moth of the Apple and Pear. Arsenite of lime proved more satisfactory than Paris Green, heretofore used."

HOME CORRESPONDENCE.

RICHARDIA ELLIOTIANA AT WILTON HOUSE, SALISBURY.—Although the above plants, strictly speaking, cannot be classed as subtropical, yet, when used as such they are effective, especially when planted in proximity to Camas, to Ricinus (Gibsoni), and other plants having dark-coloured leaves. The brilliant sunshine of the last three weeks has not affected these Richardias in the least degree. H. J. H.

CHERRY-LEAF DISEASE.—I wrote you on this subject on March 16 (vol. xxix., p. 191). We are now in the midst of the Cherry-gathering, and I am glad to say that not only is the crop a magnificent one, both as regards quantity and quality, but also that the trees attacked by Guomonia, and which retained their leaves throughout the winter (indeed, many of these are still to be seen on the trees), do not appear to have had the fruit affected in any way. A. O. W., *Maldstone*.

PLANES.—I send you with this two branches of Platanus, and ask you to kindly name them for me. No. 1 is a very large tree; it stands by the edge of a pond. I send the dimensions:—16 feet 6 inches round the trunk 1 foot from the ground; 16 feet 6 inches round trunk 6 feet from ground; divided at 7 feet 6 inches from ground into eight branches 4 feet 6 inches to 8 feet 2 inches in girth at their base. Estimated spread of branches, 90 yards. Bark much rougher than in younger trees. Age unknown. Tradition says it was brought over by the Knights Templars, who had a preceptory here. Height estimated at 72 feet 6 inches. *Platanus* No. 2: Girth 1 foot from ground, 9 feet 3 inches; 6 feet from ground, girth 7 feet 6 inches; divided into two leads, 9 feet 6 inches from the ground. Spread of branches 45 yards; estimated height, 68 feet. This tree was planted between 10 and 50 years ago. *John McTearnt, Ribston Hall, Yorks.* [No. 1 is P. acerifolia; 2, P. orientalis, Eb.]

AN INTERNATIONAL HORTICULTURAL EXHIBITION.—It was hardly a matter for surprise that with such a splendid open expanse and abundant elbow-room, the subject of a great International Exhibition, its successor after the lapse of nearly forty years of the great one of 1886, should have cropped up in the Old Deer Park at Richmond the other day. It was a matter of intense satisfaction to find how unanimous were all interested in the subject, and in wishing to see in London one more of these grand reunions of the world's horticulturists. Naturally, the Council of the Royal Horticultural Society is looked to, to lead in this matter, but failing such movement, it seems likely that, as happened in 1886, a lead will be given from outside. That may either conduce to unpleasant complications, or force somewhat sluggish hands. If the Council really desire to give effect to the general wish, it cannot indicate such intention too soon. A powerful committee must be formed, on which the Council shall have representation; but to conduct so big a thing worthily, not only is a big general committee of one hundred members needed, but that this body should be broken up into some half dozen sub-committees. That Royal patronage could be secured for the exhibition should be assured; and with the wonderfully favourable conditions which now exist as compared with those in 1886, the show should be a magnificent function and success. But fully two years are needed to elaborate it. To hasten it is to be lost. A Fellow.

TEMPERANCE DRINKS.—It is often a matter of reproach to temperance workers that they fail to provide any substitutes for the alcoholic drinks which they deprecate. The charge is in some sense a just one, and the C.E.T.S. has therefore spent considerable effort in popularising cheap, easily-made beverages, which, though not intended to supplant other drinks, yet form effective thirst-quenchers, which will allow young men and women to keep from

beer in the harvest and hay-fields, &c., during the hot weather. They are nonrishing, are in no sense injurious, and may be freely partaken of. Bartikos is especially suitable for household use, while cyclists, cricketers, and others will find it most palatable. The following are the recipes:—1. Take 2 oz. Robinson's Patent Barley, 7 oz. sugar, one lemon. Mix the Barley to a smooth paste with a little cold water. Add the sugar and the juice, and thin rind of the Lemon; then pour over it a gallon of boiling water. Stand till cold. Cost 3d. per gallon. More Lemon or sugar may be added. This preparation of Barley is also sold, ready flavoured and prepared by most grocers, in 3d. and 6d. packets, and is known as "Bartikos." This is by far the most convenient form of the beverage, being made in exactly the same way as a cup of cocoa. It may be prepared in large quantities with very little trouble. 2. Take 2 oz. fine oatmeal, 6 oz. sugar, one Lemon. Mix the oatmeal to a smooth paste with a little cold water; add the sugar and the juice and thin rind of the

now scarcely needs roguing. In the remarks about Early Peas, Best-of-All should read First-and-Best, which is the earliest white Pea. May Queen has white pods, but the Peas are parti-coloured, the same as Gradus, and Supreme is a Blue Pea. Charles Sharpe & Co., Ltd.

THE LAST SHOW AT THE DRILL HALL.—Seeing that the Rose men were to have a big innings at the Temple on the 11th, there was hardly need for a minor show at the Drill Hall two days previously. Roses are very well for those who specially admire or win prizes by them, and rosarians are in relation to prizes just as human as other florists, it not a little more so. But we are not all mere rosarians. Some of us think quite as much of other things, and like to see everything possible that may be in season; but there is more. How greatly indebted is the Society as such first, and horticulture generally second, to all those many large-hearted persons or firms who exhibit so liberally at the Drill Hall all the year round, and for no prizes whatever. Is it

from seed supplied by a firm in the midlands, whose stocks of Cabbages are second to none. Four acres were planted in September last, and the remainder between September 25 and October 6, all in the same field, and from the same seed-bed. In the early planted portion at least 50 per cent. had run to seed, but in the remainder of the field only about 1 per cent. showed the least tendency to do so, the remainder showing fine solid hearts. I feel convinced that if the following points are carefully observed, it is possible in nine years out of ten to secure a crop of Cabbages early in the spring without any bolters in the crop, always supposing that the seed is of the finest stock, and has been saved from stamps. (1) Sow Myatt's Offenham, Ellam's Early, or a cross between the two, called Johnson's Market Garden; (2) Sow the seed from July 25 to August 10; (3) Transplant the first week in October. This enables the plants to make a fair amount of growth before severe weather arrives, so that in the spring they have little growth to make before they form



FIG. 11.—A PRETTY DINNER-TABLE DECORATION BY MRS. O. G. ORPEN, COLCHESTER.

(From a photograph taken at the "Temple" Rose Show, July 1. See p. 30.)

Lemon, then pour over it 1 gallon of boiling water. Stand till cold. Cost, 5d. per gallon. More oatmeal may be preferred, especially for workers. *George B. Charles, Clerical Secretary, Canterbury Diocesan C.E.T.S.*

PEAS AT SLEAFORD.—In your notes on "Peas at Sleaford" (p. 6), you say: "The first of all the wrinkled varieties was Oxonian." This is apparently a slip of the pen, and meant for Exonian. You then proceed to remark that "it appears to be a selection from Alpha or Dr. Hogg." It is, however, a full week or ten days earlier than either; the Peas are more tightly packed in the pod, and it is quite as good a bearer as Dr. Hogg, and better than Alpha. When generously treated on good soil, Exonian becomes robust, attains a height of over 4 feet, and is one of the very best of all the wrinkled first earlies. A. H. ["Ex" not "Ox" was intended. We recognised the better qualities of Exonian than Alpha or Dr. Hogg, but nevertheless it appears to possess some of the characteristics of both those varieties. Ed.]

—We have read with interest your able report of our Pea trial-ground. The paragraph in relation to the sending out of new seedling Peas is very much to the purpose. If the raisers would but keep them for two or three years until thoroughly fixed, it would save the trade a great deal of trouble. For instance, Dr. McLean sent out by Turner many years ago. This Pea has been nearly perfectly true ever since it has been sent out, and even

good policy to shut these out at a July meeting just when so many of them may have something of exceptional interest to show, and is it fair? I hope the mistake of the 2nd will not be repeated. *A Fellow.*

BOLTING CABBAGES.—This subject has been well discussed in the horticultural papers every season for many years past, but I do not remember having before seen it stated that to sow old seed is a preventive against Cabbages bolting. Although this theory may hold good with regard to certain other crops (Mangels for instance) where the process of saving seed differs from that adopted for Cabbages, it would surprise me very much to see next May that seed of, say, Myatt's Offenham Cabbage, harvested in 1900, and sown this month, produce a crop showing a greater tendency to bolt than one from seed harvested in 1896 or 1897, and saved from the same stock. I do not agree with Mr. Watkins with regard to Ellam's Early, which he says is almost sure to have a percentage of bolters. In my opinion, this variety as originally introduced, does not show a tendency to run to seed, and in this respect is equal to Myatt's Offenham, Early Market, or Wheeler's Imperial (Warrminster strain). There is, however, one point which I think has not yet been touched upon, and that is, that the time of planting affects the ultimate result. About two months since I inspected a field of fifteen acres of Myatt's Offenham, near Boston (in which district hundreds of acres are grown for the northern market(s), grown

from seed supplied by a firm in the midlands, whose stocks of Cabbages are second to none. Four acres were planted in September last, and the remainder between September 25 and October 6, all in the same field, and from the same seed-bed. In the early planted portion at least 50 per cent. had run to seed, but in the remainder of the field only about 1 per cent. showed the least tendency to do so, the remainder showing fine solid hearts. I feel convinced that if the following points are carefully observed, it is possible in nine years out of ten to secure a crop of Cabbages early in the spring without any bolters in the crop, always supposing that the seed is of the finest stock, and has been saved from stamps. (1) Sow Myatt's Offenham, Ellam's Early, or a cross between the two, called Johnson's Market Garden; (2) Sow the seed from July 25 to August 10; (3) Transplant the first week in October. This enables the plants to make a fair amount of growth before severe weather arrives, so that in the spring they have little growth to make before they form

LAW NOTE.

RUTHERFORD v. L'HORTICOLE COLONIALE.
JUDGMENT.

WE have already chronicled the result of this case, but in view of the great importance of the judgment both to seller and buyer, we think it desirable to print the summing-up of the Judge in full, from the shorthand notes, which have been placed at our disposal.

MR. JUSTICE BACEY.—This is an action in which the plaintiff seeks to recover damages for breach of a warranty on the purchase of a plant, the description of which is "Odontoglossum Tropicum de Rem-outlet," for the sum of 250. The defendants gave a guarantee or warranty that the plant was true to description. The plaintiff alleges that the plant is not true to description, that the plant delivered to him was not an *Odontoglossum* of the description *Tropicum de Rem-outlet* but an *Odontoglossum* of all [? Ed.] but altogether an inferior plant, and not worth more than 25 or 25 of the most, whereas the plant, had it been according to the description, would have been of great value.

Now the question really turns on the plant as delivered to the plaintiff. It seems to be admitted that the plant produced is not an *Odontoglossum* (? Ed.), but a plant of an inferior character. The question is whether the plant produced in Court to-day is the plant that was delivered by the defendants to the plaintiff. The defendants say it is not, and the plaintiff says it is. That is the main question for me to determine.

Having regard to the evidence given on behalf of the plaintiff, I think that it is not the evidence given on behalf of the plaintiff is sufficient, if not displaced by the evidence given on behalf of the defendants, to prove the plaintiff's case. The plaintiff speaks of the plant arriving Mr. Rutherford was called and he said he saw the plants arrive. They all had labels, he produces the labels which were upon the plants when they arrived, and he saw the plants with the Bambouillet labels on them at the Orchard house. He says that the pot in which the plant now is, is the same pot as that in which it came. It is a pot of Belgian make, and the plant has never been removed from that pot. Mr. Rutherford and his gardeners keep a register. The plant was entered in the register, and the number which it entered but it was described, and the number of bulbs, and it had six bulbs, and it was entered in the register with the number of bulbs with the label on "*Odontoglossum Triomphe de Bambouillet*." Mr. Rutherford paid £20 for it, and therefore it was carefully watched, and it did not flower until January, 1900. Then beyond all doubt it turned out that the blossom was not true, that it did not answer the warranty. Mr. Lupton, Mr. Rutherford's gardener, was called. He said he met the plants at the station, took them to Mr. Rutherford's place, "Rendwood," sent word to Mr. Rutherford that the plants had arrived, and unpacked them in his presence. The particular plant in question was put into the house where the *Odontoglossum* were kept, and he put on it a label, and made the entry in the book, and put a label on the pot. Now, according to that evidence it is clear that they have watched that plant ever since, and it has never been transplanted. Now if that evidence is true, undoubtedly the plaintiff has proved his case that he received from the defendants a plant which does not answer the description given in the warranty. Now is that displaced by the evidence of the defendants? The defendants call Mr. Hamont, who is, I understand, the superintendent of Horticulture to the defendant Company. He says that he has a register of a very large business, and have a very large number of *Orchids*, and send out a good many thousands in the course of a year or season. The defendant's witness says he took the particular plant from a house where only *Odontoglossum* were kept and he put a label on it, and the wooden label was withdrawn when the other label was put on. Then he said—and this was important—that when the plant was sent off he had four bulbs and a growth. That seems to go to show that the plant which had four bulbs and a growth was not the same plant which had six bulbs when it arrived at the plaintiff's house. Therefore, in some way or another there was a mistake, and if the plant which the defendants brought, they sent off as a *Bambouillet* was a plant which arrived at the plaintiff's house with six bulbs on. As I have said, the defendant keeps a register, and the evidence on their part depends entirely on the memory of Mr. Hamont, or almost entirely upon his memory. It appears that his attention was not called to the matter until a long time afterwards, and he may well be mistaken. It seems to me that I ought to find in favour of the plaintiff upon this part of the case, that the plant produced in Court was the plant sent to him as the *Triomphe de Bambouillet*; and as it is admitted that the plant is not a plant which answers the description, the warranty has not been complied with.

I may mention another circumstance with reference to that which I have just mentioned before. The plant that was sent away, in the ordinary course, have flowered in the following spring. This plant did not flower for two and a half seasons or more, and therefore it is not likely to be the same plant. It is suggested by the defendants that it was not properly cultivated, and that the want of cultivation would affect the flowering. I do not think that is open to the defendants, because it was raised that earlier in the case, and then abandoned it.

Now the only question remaining is, the question of damages. I have a considerable body of evidence of witnesses produced on behalf of the plaintiff who say that this plant, if it answered the description, would be of the value of £60 guineas. Mr. Cowan gives evidence to that effect, Mr. Low gives evidence to that effect, and Mr. De Bary, who has given evidence to that effect. They are all gentlemen of experience who speak very positively as to the value of a plant of this description. On the other hand, the evidence of the witness for the defendants, Mr. Seluster, is that the value of an orchid of this description would not be more than £20. Then there is the evidence of Mr. Cannon, who is the defendant's solicitor, but who says he is also a large orchid grower, and he says he would not give £20 for the orchid. There is a great conflict of testimony. I must deal with it in the best way I can, and when I find on the one hand the witnesses for the

plaintiff saying that the plant is worth £150, and the witnesses on the other side deprecating that value, I am inclined to assess the value of that orchid at £120. I think there is no doubt at all about the principle upon which I should assess the damages in a case of this kind of breach of warranty. It is the difference between the value of the article as it is, and the value it would have been if it had answered the description. In my opinion if it had answered the description it would have been worth £120. The present value of the plant I understand to be not more than £5 or £6. Putting it the highest, £6. That leaves the amount of £114, at which I assess the damages.

There will be judgment for the plaintiff for £114.

Mr. HORTON: And the costs, my Lord?

Mr. JUSTICE BARRY: Yes, and the costs.

In reference to this matter we have received a letter from *L'Horticulteur Colonial*, of which the following is a translation:—

"The judge has given his decision. It seems to us that common sense has also a word to say, and that this question concerns a large number of your readers. We sold four years ago to the plaintiff some fine varieties of orchids, among them the one which formed the subject of the recent judgment. The daily journals have recorded the facts that one of them was taken back by us and the money returned, and that another having flowered, was returned by the purchaser because it was worth the money; and that as to the *Triomphe de Bambouillet* it was not worth more than £8. When the purchaser returned to us the first orchid, we refused to establish without comment. When he sent us a flower of *Triomphe de Bambouillet*, this was so unlike what it had been with us, and with the French nurserymen from whom we purchased it, that we were made to recognise it, and refused to take back. The plaintiff threatened us with a lawsuit.

We allowed him to carry out his threat not only that we might defend our rights, but because there was an interesting legal point to establish. We sold four years ago a rare variety for £50. The plant was in good condition, as are all those which we grow at Moortbeck. All our visitors know the good order which is there maintained. We are certain that we supplied the true variety; but an abnormal circumstance occurred which ought to have influenced the judge and the three expert witnesses. The plant has only flowered on one occasion, and we have seen the description of the purchaser's orchid-house, and this gentleman asserts that the plant is still at the present time in the same materials and in the same pot. How could it flower well in such circumstances?

"Our counsel suggested to the purchaser that he should deposit the plant in the hands of a good cultivator, who would period it and give it in this manner it could be ascertained if the bad flower of last year was due to degeneration. We are inclined to believe in this degeneration, because elsewhere properly cultivated, our varieties have always improved, as the following instances show:—

"We sold to Mr. W., also after an inspection of the illustration in the *Lindens*, three celebrated varieties of *Orchids*, *Lindens*, and *Moortbeck*, which were very high priced—*Lindens*, *Lindens*, and *Moortbeck*. Since then they have been so much admired at the meetings and exhibitions in England that it was clear that their beauty was not exaggerated in the *Lindens*. Let Mr. W. tell us if the varieties *And Charles* and *Kegeljan*, which we sold him when in flower, have not degenerated under cultivation, or whether they have not become more beautiful.

"We sold also to Mlle. B. R. three years ago, after an inspection of a plate in the *Lindens*, the *Odontoglossum Fairy Queen*. When it first flowered, Mlle. B. R. was dissatisfied, when it flowered a second time in spring, the plant was superb, and obtained a First-class Certificate at Manchester.

"Last year we exhibited at the Temple Show *Odontoglossum crispum* and *Odontoglossum*, and obtained an Award of Merit. We sold it to Mr. L., who cultivates orchids only. He showed it in his last spring in London, and obtained a First-class Certificate. Are these facts conclusive?"

"This is not the only point in which the judgment is extraordinary. It is so, especially by reason of the fact that the plaintiff called three experts to testify that if the variety had been in conformity with the plate in the *Lindens*, it would have been worth not less than £150. The three witnesses were unanimous on this point, and have thus confirmed what we allege on every page of our catalogue, that we sell 50 per cent. cheaper than other establishments.

"In condemning us to reimburse the plant at a higher price than we sold it for, the judgment has created a dangerous precedent alike for amateurs and for nurserymen. In the face of such a judgment the seller might on his side demand from the purchaser the difference (enhanced value) when the variety improves under his care. Thus, if the *Odontoglossum crispum* (Cochet) above mentioned was worth £20 when we sold it, the purchaser's suits admit that it is worth double that amount now.

"What would be the verdict of the same judge if such a case came before him and if we demanded to-day the difference between the value of the plant at £150?"

"We should always be consistent. If the price can be altered when the value is lessened, it might also be altered when the value is increased. This would be common sense. *Revoire, Sir, ex, L'Horticulteur Colonial*.

Obituary.

WILLIAM SCOTT.—There was laid to rest on Saturday, 6th inst., one who for many years was an interesting figure in the North of Scotland. Born in Peterhead in 1822, Mr. Scott during his long life played many parts, and in the horticultural world he was well known as an ardent cultivator of Ferns, competing most successfully for many years at the principal Scottish horticultural shows. He was also a naturalist and botanist of no mean ability, and was at one time a valued correspondent of Mr. Harrison Weir, the well-known artist and naturalist. Mr. Scott knew intimately the flora and fungi of Buchan, and also the beetles and moths of that district, and where to find them. A poet, too, of no mean order, Mr. Scott finds a niche in *Edwards' Minor Scottish Poets*. For several years past he had resided at Stoneywood, about five miles distant from Aberdeen. His social qualities endeared him to many; he was a bright and keen conversationalist, brimful of his native, pawky humour; and he was equally esteemed for his sympathetic, kindly, and genial disposition, which was one of the prominent traits in his character. He is survived by a widow and one son and two daughters. The son is a gardener in New Zealand.

SOCIETIES.

ROYAL HORTICULTURAL, CHISWICK.

JULY 5.—On this date a meeting of the Fruit and Vegetable Committee was held to examine *Minicoper Peas* and *Lettuces*. Mr. G. Bannard was in the Chair; and also present were Mr. W. Marshall, Messrs. W. Farr, H. Esling, S. Mortimer, W. Bates, W. Pope, A. Ward, G. Wythes, J. Willford, and A. Dean.

Mr. G. WYTHES presented two fruits of a new green fleshed Melon "*Victoria*," raised from *Syon House X Sutton's Epicure*, of good size, and well netted. They were of such delicious flavour, that an Award of Merit was unanimously given.

Some seventy-five stocks of mid-season and late Peas were then seen, dwarf and tall, and all finely grown and cropped. Of these, one, *Sutton's Prize-winner*, 3 feet, a splendid long-podded, and good-cropping wrinkled Marrow, received the honour of a First-class Certificate.

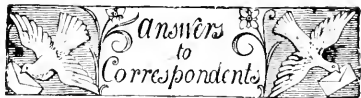
Awards of Merit were made to *Dwarf Telephone*, 2 feet high, heavy crop; *Dandy's Stratagem*, late, 3 feet, excellent variety; *Sharpe's Queen*, 3 feet, one of the best old late Peas; *Proflig Marrow*, 3 feet, a splendid cropper; *The Sherwood*, 2 feet, a capital cropper, and good successor to *Chelsea Gem*; *Sutton's Perfect Gem*, 2½ feet, great cropper; *Defiance*, 2½ feet, heavy crop; *Centenary*, 3 feet, very fine podder; and the well-known *Duke of Albany*, which had not previously received any award. Previous awards to that grand Pea, *Alderman*; to *Mansfield Show*, and *Glory of Devon*, were confirmed. The *old Omega* was here in capital condition, as also was the much older and heavy-cropping *Prince of Wales*. An Award of Merit was also given to a purple-podded, stump-rooted or *Narrow Trump*, long and oval-shaped, certainly earlier, finer, and sweeter than is the white *Jersey Navet*. Similar awards were given to *Green Cos Lettuce*, *Junabo* and *New Yorker*, both first-rate forms; sweet, crisp, hearting *linety*, and standing well; also to *Curbed Cabbage Lettuce Duke of Cornwall*, and a high commendation to *Cos Lettuce Herbigier*. The Committee, desirous of marking their sense of the general excellence of the Pea trial, and the high cultivation shown in connection with it, took the unusual course of passing a resolution of special commendation to Mr. S. T. WRIGHT and his staff for the admirable work shown. A suggestion made that the gathering of the Committees at Chiswick on Tuesday next, should be taken advantage of, to obtain from them an unofficial expression of their views with respect to the provision of a proper trial-garden for the Society, was heartily endorsed, and it is hoped will be generally agreed to.

THE WEATHER IN WEST HERTS.

A VERY warm week. On four days the highest temperature in shade exceeded 75, and on the hottest of these days rose to 82, making this the highest shade reading as yet recorded here during the present summer. The nights remained warm until the 8th, but during the last two nights the exposed thermometer has fallen respectively to within 7° and 8° of the freezing-point. At 2 feet deep the ground is at the present time 1° warmer, and at 1 foot deep 6° warmer than is reasonable. About one-tenth of an inch of rain fell on the 3rd, but since then no rain at all has fallen, and for more than a month no rain water whatever has come through the bare soil percolation gauge. The record of bright sunshine during the week proved unusually good, averaging seven hours a day. The winds were very light, and the air, on the whole, exceptionally dry.

JUNE.

Taken as whole, this was a month of about average temperature. The days were, as a rule, unusually warm, while the night readings, on the other hand, proved as unseasonably cold. As regards temperature, the most marked feature was a week of continuously cold weather in the middle of the month, on the last night of which the exposed thermometer showed 3° of frost, making this the coldest night experienced here in June for six years. Rain fell on only ten days, the total measurement being less than half an inch, which is less than half the June average, and equivalent to a watering (as a rule, about 2 gallons) on each square yard of surface in this district. No rain-water at all came through the percolation gauge on which short grass was growing, and no measurable quantity through the bare soil gauge after the first week. The sun shone on an average seven and three-quarter hours a day, which is about one and a half hours a day in excess of the mean for the month. The strength of the wind was, as a rule, about reasonable, on the 23rd, however, a strong westerly wind was blowing, the mean velocity in the most windy hour reaching 17 miles. The amount of moisture in the air was exceptionally small; indeed, in only two previous Junes during the last fifty years has the atmosphere been as unusually dry. *E. M. Eckhardt, July 5, 1901.*



ADDENDA.—HANLEY FLOWER SHOW.—We are informed by MESSRS. R. Handland & Son, Lough Finsay, co. Cork, that they were awarded a Gold Medal for Begonias at the Hanley flower show, of which award our reporter failed to make mention. The firm received a similar award for exhibits at the show of the Royal Horticultural Society of Ireland (Dublin), last Tuesday. Of course, we do not undertake to mention all exhibits.

ASPARAGUS WITH BEETLES.—S. A. C. This pretty insect is known as the Asparagus-beetle (*Crioceris asparagi*), and was figured and described in *Gardeners' Chronicle*, January 8, 1870, p. 11. Be careful to burn the Asparagus growths when you cut them down, as the stems will contain myriads of eggs. Some of the growths affected worst, should be removed at once. Syringing the Asparagus at the present time with hot water, which will make the beetles fall, then scatter soot or unslaked lime over them whilst upon the soil.

ASTERS.—S. & S. We can find no evidence of beetle or fly. Probably the injury is due to the Aster-worm (*Elychtricus parvulus*), figured and described in *Gardeners' Chronicle*, August 11, 1897, p. 97.

CORRECTION.—In our report of the National Rose show last week, the name of W. Upton, Esq., was printed as 1st prize winner in the amateur's class for pine-blossoms P.'s or N.'s (distinction). It should have read A. Mum, Esq., Teaplewood, Hedgeley, Slough, who also won the premier honour for six blossoms of one variety in the same section, 1st, for growers of fewer than 200 plants.

CUCUMBER STEM DECAYED.—W. G. The plant has succumbed to a malady common to the Cucumber and the Melon, and it is usually set up by excessive wetness of the soil round about the stem, and by constantly pouring water against the latter. In order to avert it the bed of soil should be in the form of a

mound when the plants are set out, and the soil that is added afterwards should be sharply sloped away from this part. When canker is first noticed, apply charcoal-powder to the spot.

CUCUMBER-LEAVES SPOTTED.—R. P., *Worthing*. The angular dry leaf-spots are indicative of the downy mildew, and this fungus was recognised after keeping the specimens moist for some time. This is not easily checked after first appearance, although Bordeaux Mixture has given good results in early stages. Water laying on the foliage, or want of ventilation, would favour the disease.

DISEASED PEACHES.—H. W. The stone is split, and the kernel is in a state of decay. The causes which lead to the splitting of the stones of Peaches, &c., are not known with certainty. It is usually supposed to be due to the absorption of excess of water by the roots, following on a very dry state of the soil. This in some instances may cause the bursting of the stone, admitting moisture, and causing decay of the immature seed, and thus upsetting the whole economy of the fruit, arresting its growth to a certain extent, and usually bringing about a fissure in the flesh round about the stalk. Some varieties of Peaches, and some kinds of stocks, may be predisposed to the malady; and when that is the case, it is the better policy to replace these trees by others than to waste time in attempts to cure it. Again, splitting may be due to the imperfect setting of the flower, which seems a probable cause, not all the fruits on a tree being similarly affected. There may be malformations in, or imperfections of, the organs of some of the flowers, which hinder complete fertilisation of a kind met with in the flowers of some varieties of the Grape-Vine. As a means of arriving at a more correct knowledge of the causes the flowers of varieties liable to have split stones might be artificially pollinated with other pollen than their own.

FIGS.—G. H. We do not think proximity to the gasometer has caused the fruits to fall. The first crop of Figs is frequently a source of anxiety to the gardener, and very little provocation is needed to cause some of the fruits to fall. The best means to prevent them doing so, is to so attend to the details of affording water, heat, and fresh air, that the plants will suffer no check. Another means of preventing them is that of stopping the shoots when they have made six inches or so of growth. You might try this in respect to some of the shoots, and note the result.

INSECT.—*J. Mochar*, *Sirex gigas* (great sawfly).

IRIS DISEASED.—C. W., *Dod*. The fungus *Helminthosporium* found on specimens last year could not be recognised. The numerous black bodies embedded in discoloured parts are sclerotia of a *Botrytis* fungus, the active spore-bearing stage of which is abundant on the specimen. There is no good method of treating this fungus directly. It generally indicates dampness, either in air or soil. A heavy soil with poor drainage causes a similar disease to Tulip, Narcissus, and other bulbs. Lime added to the soil should act beneficially, if it is not already present, but any means to open out the soil should be helpful. Of course, I do not know what the soil is like; (the above remark is only suggested by specimens, W. G.)

MELON AND OTHER LEAVES.—C. C. W., *M*. Sun scorching. The CUCURBITACEAE leaves have been punctured by green-fly, bacteria come afterwards. *Chrysanthemum*; the leaves have suffered from some errors in cultivation, such as lack of air, brought on by over-crowding, lack of water, or excess of it at the root.

MELON-LEAVES.—H. D. K. The leaves are scalded; perhaps they have been syringed while the sun was shining.

NAMES OF PLANTS.—*Correspondents not answered in this issue are requested to be so good as to*

consult the following number. T. B. D. A form of *Delphinium ajacis*, common Larkspur.—*Empire*. *Lilium monadelphum Szovitzianum* (syn. *L. colchicum*).—A. H., *Loughboro*. We cannot undertake to name varieties of Roses or other florists' flowers.—G. F., *Northampton*. 1, *Pteris cretica*; 2, *Pteris tremula*; 3, *Adiantum hispidulum*; 4, *Pteris cretica albo-lineata*; 5, *Pteris longifolia*.—R. R. The *Odontoglossum Vuytstekeanum* is the true plant going under that name in gardens; the variety of *O. crispum* very distinct, and one of the other *Odontoglossums* has a crest much like *O. Andersonianum*. The other, with a more spiny crest, seems near to *O. x Adriane*.—C. K. B. 1, *Silene Armeria*; 2, peloriate variety of *Linaris vulgaris*; 3, *Hydrangea quercifolia*.—D. K. L. 1, *Corydalis lutea*; 2, *Linum usitatissimum*; 3, *Oenothera Lamarckiana*; 4, *Colonia grandiflora*; 5, *Lychnis chalcidonica*; 6, *Veronica spicata*.—G. R. W. 2, *Oenothera Youngii*; 3, *Stenactis speciosa*; 4, *Crocus*; 5, *Polemonium ceruleum*; 6, *Agrostemma coronaria*; 7, *Morina longifolia*; 8, *Campanula trachelium*; 9, *Helianum autumnale*; 10, *Lychnis viscaria*, double. Another time do not send more than six, and pack and label them more carefully. Try and think what the specimens will be like when they reach us, and when they will perhaps have to wait a long time before we can look at them.—*Leavis*. Both varieties of that form of *Cattleya labiata* known as C. Warneri.—H. J. H. *Oncidium crispum*—a very fine variety.—W. K., *Preston*. 1, *Hippophae rhamnoides* (*Sea Buckthorn*); 2, *Elymus arenarius* (*Sand grass*); 3, *Olearia Bastii*; 4, *Glaucium luteum* (*Horn Poppy*).—*Herbaricus*. 1, *Agrostemma coronaria*; 2, *Stenactis speciosa*; 3, *Helianum autumnale*; 4, *Lysimachia thersiflora*; 5, *Silphium*; 6, a very fine *Potentilla*, not known to us.—S. W. *Azara microphylla*.—*Cambrian*. 1, *Solanum Dulcamara*; 2, *Pyrola secunda*; 3, *Rhinanthus crista-galli*; 4, *Pinguicula vulgaris*.—*Taurus*. Specimens insufficient: 1, *Eugenia*? send in flower; 2, cannot be named from specimens sent; 3, *Diplopappus*; 4, *Podocarpus* sp.; 5, *Syringa Josikae*, probably, send in better condition; 6, *Bupleurum fruticosum*; 7, *Calcicola violacea*; 8, *Spirea opulifolia*.—W. H. B. *Ruscus androgynus*.

PEA.—M. J. W. The spots on the leaves are apparently the result of the sun shining through drops of water, such as dew. The Beans are affected with a fungus *Fredo*.

PELAGONIMUS.—C. T. There is no trace of either fungus or insect work. Are not the black patches caused by contact with some fertilizer?

PRIMROSE LEAVES.—P. R. C. We see neither fungus nor insect. Is it from drip, or have you been using some insecticide carelessly?

TAX ON GLASSHOUSES.—*Bristol Jack*. See p. 416 in our issue for June 22 of the present year.

TRUFFLES.—*Berks*. The specimens sent are true Truffles.

VINE LEAVES FLABBY, &c.—*Constant Reader*. The flabbiness of the leaves is due to the presence of too much moisture in the house at times, and to lack of sufficient ventilation. Air should be admitted, and the moisture removed from the leaves before six in the morning.

VINEWITH DISCOLOURED LEAVES.—G. W., *Reader*. The fungus is not the *Cladosporium*; it is the mildew, which has often been referred to in these pages.

WHITE-FLOWERED STOCK.—A. E. T. A fine and beautiful variety of the Intermediate Stock. Good for beds and borders, or for growing in pots for greenhouse or window decoration.

COMMUNICATIONS RECEIVED.—J. J. S., P. J. Hudson, W. G. S.-W., S.-H. J. C. T. a, J. W. K. M.—W. K. M., V. D. K.—H. K.—H. M.—J.—W. J. W.—B. R. W.—G. W.—H. W.—E. M.—J.—W. J. & son—W. S. C.—W. H.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—H. J. C.



THE

Gardeners' Chronicle

No. 760.—SATURDAY, JULY 20, 1901.

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LILIES AND THEIR CULTURE.

(Continued from p. 21)

THE TIGRINUM GROUP.—Lilies of the Tigrinum group succeed under conditions favourable to *L. speciosum* and its varieties. Tiger Lilies are very telling in the mass, particularly the late-flowering variety *L. Fortunei*, and its form *giganteum*; this latter, a plant with spikes of from thirty to fifty flowers, each of a "mixed" ground colour of yellow, orange, and red, heavily spotted with chocolate. It is distinct whilst in growth in its markedly woolly stems. This variety likes a strong loam and generous treatment when growing; well grown specimens attain a height of 6 feet. *L. tigrinum splendens*, the earliest of the Tiger Lilies to flower, and a splendid forcing variety, has by far the finest flowers of all; the colour is of a brilliant orange tint, spotted on the inside of the long, elegantly-recurved petals with purple-red or black. These and the old double Tiger Lily, one of the few Lilies that are really double and handsome withal, comprise a group which may be planted in any well-tilled soil with a certainty of success. Once acclimatised and fully established they will take care of themselves; and if it is desirable to increase them at any time, scores of small blackish bulbils will be found in the axils of the leaves. If these are encouraged

to develop fully by removing the inflorescence, and are planted when ripe enough in a light, sandy soil, they will grow away freely, and develop into flowering bulbs in the fourth year, reaching their maximum size in the sixth and seventh. The flowers of the old Tiger Lily have been described as dull and uninteresting; such cannot be said of its garden varieties. For instance, a group of *L. tigrinum splendens*, seen at their best at the close of a warm day, produces an effect such as could not be obtained from any other Lily outside the auratum group; whilst Fortune's giant Tiger Lily, with its erect spike of forty or more handsomely-spotted flowers, and long, bright, yellow and red-tinted buds, and grey pubescence below, is really a noble Lily when well grown. *Lilium Leichthni*, a slender growing Lily of the Tigrinum type, with buff-yellow flowers, spotted with orange, and *L. Maximowiczii*, a similar plant, with orange-coloured flowers, spotted a darker tint, grow well with the Tiger Lilies. Neither are generally cultivated, possibly because their flowers are less showy than many others.

MARTAGON AND CANDIDUM TYPES.

These Lilies are distinct from the preceding ones in one important feature, which bears on their cultivation, viz., they have no stem-roots, or but few, and, as a general rule, they do not flower well the first year after planting. Should they tend to produce a big inflorescence, it is advisable to remove it till root-action is stronger. They should all be planted as early in the autumn as is possible, even before the leaves die down, for these will help the bulbs to re-establish themselves before winter sets in. In removal, every piece of root should be preserved intact, and the bulbs planted in their new quarters forthwith. Orders or new stock should be placed by September at the latest, if even a partial success is wanted the first season. If for various reasons they are obtained later in the year, it is advisable to stratify them in damp sand, and to place them in a temperate-house, in order that they may make roots an inch or so long before they are planted out; a very light compost should be placed beneath the bulbs to encourage further root-action. *Lilium candidum*, *L. excelsum*, and *L. Hansonii*, do not require to be stratified before planting out, their root-action being much quicker than that of others. This group of Lilies is generally adapted for planting in the herbaceous border, for, once established, they do not require any particular treatment; a well-cultivated soil is best for them, planting the bulbs fully 5 inches deep, not forgetting the usual envelope of sand—an important measure in the planting of all Lily bulbs. If the subsoil is light, poor and dry, it should be removed, and a good dressing of turfy loam, old cow-manure, sand, and vegetable refuse placed 4 or 5 inches below the bulbs, deep cultivation being as essential to these Lilies as surface cultivation is to stem-rooting kinds. A light, porous soil is best above and around the bulbs, but a stiffer, more or less retentive soil is best below them, for it is here that the roots will feed, and at a time when droughts may be expected. Surface mulchings, or manure applied in any form at the surface does more harm than good. In watering these Lilies the surface soil should be loosened with a digging-fork, in order that moisture may quickly pass to the subsoil—having regard to the fact that the feeding extremities of the roots are some 9 inches below the surface.

Those Lilies which grow well in a sunny position are the old purplish "Turk's Cap," *L. Martagon*, *L. M. dalmaticum*, a handsome stronger-growing form, with richer purple flowers on stems 5 feet high, and its black-purple coloured form *Cantani*, *Lilium monadelphum*, a charming free-flowering Lily, with twelve to twenty yellow reflexed flowers, the filaments of which are united in the lower third; and its variety *Szovitzianum*, with larger, citron-yellow, less reflexed flowers, which open a week or ten days later, and have free filaments and crimson anthers, are two Lilies which should be represented in every garden. Their handsome spikes of bell-shaped flowers, produced in early June, are of a pleasing appearance on the plant; but their heavy, somewhat sickening colour, detracts from their value as cut flowers. *L. pyrenaicum*, a kindred plant, dwarf and sturdy-growing, with six or eight greenish-yellow, spotted flowers surmounting a stem densely clothed with a multitude of ample leaves, is another sun-loving species. Its habit is quite pyramidal and distinct. *L. carniflorum*, *L. chalcidonicum*, and *L. pomponium*, are all sun-loving "Turk's Cap" Lilies, with graceful, nodding flowers of some fiery tint of red, scarlet, or crimson. They are among the most charming and showy of Lilies, and are worth every effort that can be made to establish them. *Lilium Dalmaticum* (*Martagon dalmaticum* *Hansoni*) is a hybrid, producing a dozen or more flowers of the deepest maroon colour imaginable; the inside of the flower is slightly marked with yellow. *L. Marhan* (*Martagon* or *Martagon album* *Hansoni*) is a similar plant, with larger flowers, orange-yellow and star-like, densely and minutely spotted with rose-red on both surfaces. *Lilium Martagon album* requires a shady place; not that it minds sunshine, but its leaves are liable to be scorched. It also likes a cooler rooting medium than most Martagons. It is a difficult plant to establish outside, for some inscrutable reason; on the other hand, it establishes itself in pots plunged in a cold frame much quicker than other Martagons, hence I would recommend that this plan be adopted, turning the plants out into the open ground when root-growth has well advanced. It is a very pretty Lily, and one of the most popular of the Martagon group. *L. Hansonii* is a particularly good "doer," and one I can recommend strongly for general planting. It grows fully 1 to 5 feet high, and produces two to four stems from each strong bulb, and five to ten flowers on each stem. The flowers are of a rich shade of orange-yellow, and are spotted chocolate. The petals are very stout, being nearly as thick as they are broad, by reason of the projecting keels on the backs of the segments. The buds have a massive chubby appearance, and the spikes are somewhat crowded with flowers. The plant loses in this latter respect the grace of the true Martagons, but the individual flowers of *L. Hansonii* last three times as long as those of *L. Martagon*. When given a good soil, it will make both kinds of roots, and grow with great vigour; it requires shade in the middle of the day, as the flowers are very liable to scorch. *L. candidum* (the *Madonna Lily*) and *L. testaceum* (*excelsum*), the finest hybrid Lily yet raised, practically close the list of border Lilies which have no stem-roots of importance. *L. candidum* is difficult to obtain free from disease, the difficulty being aggravated by the wholesale importation of cheap French bulbs, which, when they do flower, produce miserable spikes of disease-stricken flowers—mere ghosts of what *L. candidum* ought to produce. Moreover, it is almost impossible to establish these French bulbs, and their continued importation merely serves as a source of contagion to home-grown established plants. Home-grown bulbs, when free from disease, are far better

material to plant, and they only cost a trifle more than French bulbs. This disease, despite rigorous measures in weeding out affected plants, is on the increase; and unless some concerted measures are adopted, *L. candidum* is likely to follow in the steps of *L. Harrisii*—a plant that is to all intents and purposes "dead" to cultivation. The clever Japanese speedily filled the place of *L. Harrisii* with *L. longiflorum giganteum*, so that it was not missed to a great extent. A healthy substitute for the cottager's glistening white *candidum* would be more difficult to obtain.

Lilium testaceum, an excellent border Lily, is somewhat particular as to its situation, for if planted in a sunny position it loses many of its lower leaves before the flowers expand, and the plant is thus robbed of much of its beauty. It likes a cool shrubbery, with a very light canopy of foliage overhead, best of all. There its early growth is protected from severe frosts, and its stems are guarded from injury by violent winds. Planted in the open it has rather a lanky appearance, and the flowers pass away quickly; but when grouped among the ornamental foliage with which so many old gardens abound, its handsome, reflexing, apricot-tinted flowers, with their brick-red anthers, are seen to the best advantage. Their pleasing odour, most noticeable at evening, is an additional merit. The plant forces well and at nearly all seasons, but it requires careful watering in pots. Existing colonies of this Lily should be cherished with great care, as it is becoming very scarce. Like *L. candidum*, it much resents disturbance once established. *G. B. Mullett.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

LILIUM OCCIDENTALE.

WE are unable to refer to the published description of this Lily, but owing to the kindness of Messrs. R. Wallace & Co, we are in a position to quote the following particulars from a letter of Mr. Purdy:—

Eureka Lily (Purdy).—A graceful Lily, in bulb and foliage much like *L. maritimum*; bulb rhizomatous, one stalk to a bulb only; flowers few to many, pendulous or horizontal; the lower part of the segments curving into a constricted tube, from which the upper two-thirds at first spread broadly, then the outer three become closely revolute, while the inner third remain spreading (all of the flowers reaching me did this, and my information is that this is the rule). They are brown, spotted in the throat; and the spreading segments are dark crimson, as in *L. maritimum*. Growing in rich, moist lands and around peaty bogs. A much larger and showier Lily than *L. maritimum*, but with its peculiar colouring; the form of flower is very distinct.

ORCHID NOTES AND GLEANINGS.

ORCHIDS FROM LLANDUDNO.

FROM Joseph Broom, Esq., Sunny Hill, Llandudno (gr., Mr. Axtell), comes an interesting lot of flowers, as usual bearing evidence of the pure air of the district in which they are grown. Specially attractive are an elegant spray of *Oncidium pulchellum* bearing over twenty beautiful bluish-white flowers, and an equally fine example of the carmine-crimson *Broughtonia sanguinea*, both natives of Jamaica, and both needing very

careful culture. *Lycaste Deppii* is represented by two distinct forms, the one having white petals, and the other having them densely spotted with crimson. *Odontoglossum* are represented by a fine *O. crispum*, with heavily spotted sepals and lip; *O. tripudians*, *O. Andersonianum*, and the form of *O. gloriosum* known as *albidum*, but which is often purchased (as it was in this case) as *O. nevium majus*. The *Cathayas* are a very large and richly coloured *C. Warneri*, a summer-flowering *C. labiata*; a very distinct *C. Mendeli*, with white sepals and petals and yellow disc, and purple front lobe to the lip; and a very handsome *C. Warszewiczii*, in which the purple

grown as any hardy border flower about which no doubt exists in people's minds.

It is, however, sometimes true that what gives no trouble in one garden will fall in another, and some references in the charming articles of Rev. D. R. Williamson may carry the impression that the Martagon Lily is troublesome to cultivate in the south-west of Scotland, although I feel certain that your contributor does not intend his remarks to bear such a broad interpretation. I have a good many opportunities of seeing the various forms of *Lilium Martagon* throughout a great portion of the south-west, particularly within a radius of about 30 miles round Dumfries, and



FIG. 15.—LILIUM RUBELLUM AS GROWN IN JAPAN. (SEE P. 15.)

front lobe of the lip is much enlarged, and the yellow blotches usually seen on each side of the tube much reduced. The flower measures 9 inches across the petals. Also included are good *Cypripedium bellatulum*, *C. Masterianum*, *C. Madame Barbey* (consim. Lawrenceanum), and a curious pale yellow *Anguloa*.

MARTAGON LILIES IN SOUTH-WEST SCOTLAND.

THE Lily Conference will serve a good purpose even if it only give an impetus to the cultivation of this exquisite and noble flower. There seems an impression abroad that it is difficult to cultivate, and that all the species require careful treatment, while the fact remains that many of the Lilies are as easily

my observation convinces me that it is a district in which all the forms almost invariably do well with a minimum of care. [We have known it and its white variety do well in a smoke-begrimed garden in eastern-most London, Ed.]

All the recognised garden and other forms of *L. Martagon* recorded in Dr. Wallace's *Notes on Lilies*, with the exception of *L. M. cattanæ*, which I have not met with under that name, if distinct from *L. M. dahmaticum*, are to be found in one or more gardens, and all are doing well. It is almost impossible to come across anyone who has experienced constant failure with any of them. Instances of bulbs being lost the first year are not uncommon, but that is a frequent experience with all Lilies almost everywhere.

The ordinary coloured forms of *L. Martagon* are very vigorous in some gardens, and in several, notably in that of Mrs. Maxwell-Witham, of Kirkeconnell, the old double variety is very plentiful. In this garden it has grown from a time beyond the recollection of the present owner. The white *Martagon* is also fairly plentiful in the district; but one meets

graceful in its form of spike, while the other keeps dwarfer, and gives a large proportion of fasciated stems, some of which are positively ugly, so great is the width of the flattened stem, and so unattractive the way in which the flowers are produced.

I should be glad to hear what other Lily admirers have to say upon the question of two

THE QUINCES AS ORNAMENTAL PLANTS.

AN interesting memoir of the Quinces, by Dr. Alfred Bargerstein, appears in the June number of the *Illustrirte Garten Zeitung*. The list of species and varieties given includes the common Quince, *Cydonia vulgaris* and its varieties, the Portuguese *C. lusitanica*, the Pear-Quince, *C. oblonga*; the Apple form, *C. maliformis*; the pyramidal Quince, the variegated variety, *C. marmorata*, with white and yellow leaves; the Japan Quince, *C. japonica*, introduced as a decorative plant from Japan by Sir J. Banks in 1796, and now found to the number of twenty-five to thirty varieties in gardens; the alpine Quince, *C. Maulei*, introduced in 1871, and originally described and figured in the *Gardeners' Chronicle*, Dec. 12, 1871, i., p. 710; *C. Sargentii*, also Japanese, and named by Lemoine in honour of the celebrated American Dendrologist, Prof. Sargent; and lastly, the Chinese Quince, *C. sinensis*, which indicates close relationship with other species of the genus, as, for example, in the form and outline of the leaves, and the anatomical formation of the wood; it is near to *C. japonica*, and in the backward-inclined, woolly-felted tips of the calyx, the number of the stamens, and in the free base of the style, it is related to *C. vulgaris*, and in heterostemony, it recalls *C. Maulei*.

Dr. Bargerstein believes that by careful culture, judicious selection, and artificial crossing, it is certain that new and beautiful decorative forms could be obtained; and it was with this intention that he penned the little article from which the above extracts were taken.

THE ROSARY.

SOME GOOD ROSES.

VARIETIES of Roses have so much increased during the last few years, that the nurseryman's list is apt to perplex the ordinary cultivator, and make it difficult for him to find a suitable selection. Several admirable new varieties, as well as others of less merit, have been added to our list of Roses. The tendency in the novelties is towards light colours. I believe that if the same amount of interest were bestowed on old as on new varieties, and they were tended to with an equal amount of care, gardeners would discover they were much finer than many of the newer varieties. Some of the most beautiful among new Roses are Bessie Brown, a very large creamy-white flower, of good substance, and strongly fragrant; Mildred Grant, a blush tinted flower; Mrs. Edward Mawley, a carmine shaded with salmon, a perfect flower; R. B. Cater, bright magenta, a very fine flower, of good shape and large size; Shandon, a flower of deep carmine, with a fine form, and bush of a good habit of growth; Killarney, which changes from flesh colour to white, has exquisite buds, and the bush is a continuous bloomer and robust; White Maman Cochet, a beautiful flower, a white sport from Maman Cochet; Tom Wood, is another very fine Rose of cerise tint, a solidly built flower; Cléo, of flesh colour, is very large and well formed; Cleopatra, is a fine Rose, of a pale pink hue; Souvenir de S. A. Prince, is one of the finest of Roses, pure white; Souvenir d'un Ami, is a salmon-pink Rose, of good form; Sunset resembles Madame Falcot, and is a lovely flower in the bud.

Mrs. John Laing, of a light pink hue, is a very large flower, and the plant an abundant bloomer; Mrs. W. J. Grant is a flower of a rich pink tint, a lovely very large Rose;

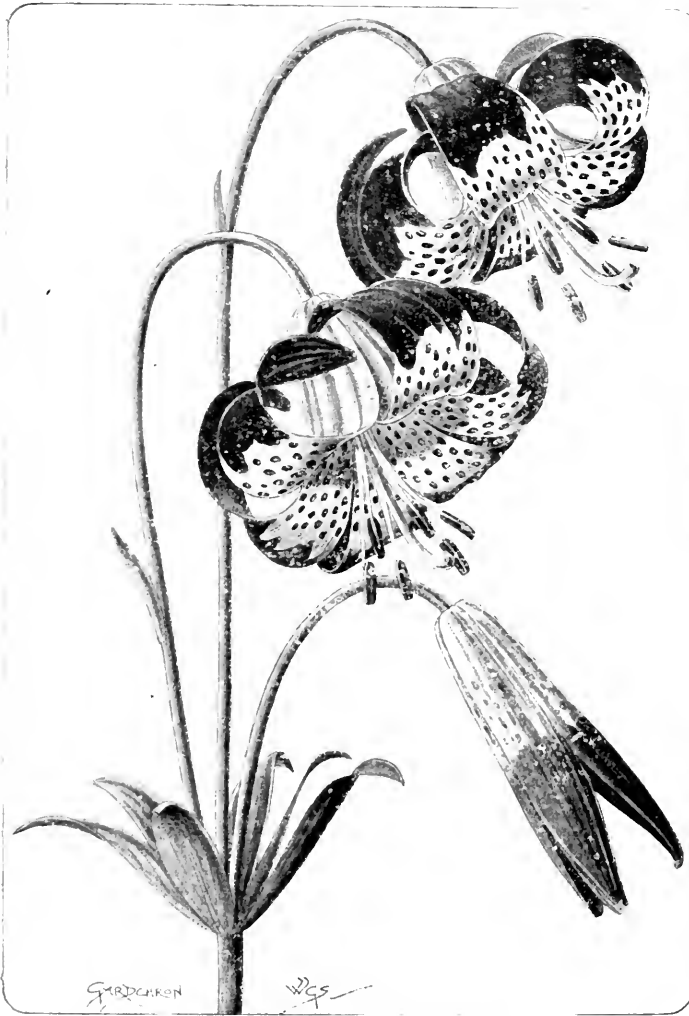


FIG. 16.—*LILIUM PARDALINUM* VAR. *CALIFORNICUM*, SOMETIMES CALLED VAR. *OCIDENTALIS*.

with far more plants of the form which so frequently produces fasciated flowers than of the more graceful variety which retains the elegant habit of the greater number of the *Martagon* Lilies. Some may question one's distinction between these white plants, but from a good deal of careful observation, and from enquiry from others who have grown the white *Martagon*, one finds that these two remain distinct in several gardens, the one never giving fasciated stems, and being more

forms of the white *Martagon*. I recently saw a row consisting of about one hundred plants, all of the fasciated type, and giving some extremely pronounced examples. In the same garden there were clumps of the other form, which had never shown this feature. *L. Martagon dalmaticum* also does well in the few gardens into which it has found its way, but it increases but slowly; it is a handsome variety, with its tall, strong stem and dark-coloured flowers. *S. Arnott, Carsehorn*, by *Dunfries, N.B.*

Marjorie, of salmon-pink, is a fine free bloomer. Marie Van Iloutte, yellow, changing to white, is a charming variety; Margaret Dickson is a white flower, having a pale flesh-coloured centre, is of a very large size; Bridesmaid is said to be an improvement on Catherine Mermet, but it retains colour longer than that variety.

Kaiserin Augusta Victoria, cream, is a distinct Rose, with the perfection of shape; Francisca Kruger has flowers of a copper tint, shaded with yellow, a fine Rose; Grand Duchess Victoria Melita, is creamy white, with light gold centre, a free bloomer in the summer, and again in the autumn. His Majesty has flowers of flattish form.

The above-named Roses were seen last year in great perfection, and there are several besides which I may mention that will remain unheated for a long time, viz., Alfred Colomb, A. K. Williams, Anna Olivier, Boule de Neige, Chess-hunt Hybrid, Captain Christy, Comtesse de Nadaillan, General Jacqueminot, La France, Ulrich Brunner, Baroness Rothschild, Duke of Edinburgh, Viscountess Folkestone, Marquis Litta, Caroline Testout, to say nothing of Marsechal Niel and Niphetos, which are two unique varieties for in or outdoor culture. Here we are seldom without flowers of Niphetos.

I favour the planting of Roses in the early autumn or in March, early or late, accordingly as the weather is favourable or otherwise. There is much advantage derived by planting Roses whilst the ground retains some amount of warmth, as is the case in the autumn. Land for Roses should be deeply dug or trenched, some good manure being incorporated during the digging. Shallow planting is to be preferred, taking care to make the plants secure against wind-rocking by staking them.

Ten Roses should be afforded a warm position, especially the more delicate varieties, and if they can be artificially shaded from hot sunshine when in flower, so much the better, as this very much prolongs the season, and also the delicate colours.

All persons interested in and intending to buy Roses should visit some Rose shows or nurseries where Roses are a speciality. My advice to those who do not know much about Roses is to go to a trustworthy nurseryman, explain their requirements, and allow him to make a selection. It may cost a few shillings more money, but it is better than attending sales and buying promiscuous lots, which may include what they have already got. W. A. Cook.

SOME WALL ROSES, AND OTHERS.

At the meeting at the Drill Hall on June 18, I showed two Roses, with the object of ascertaining their names, as I had not got them. Mr. Paul, of Messrs. Paul & Son, kindly gave me the name of one of them, viz., Reine-Marie Henriette. This is an admirable wall Rose. I have never seen it at any of the Rose shows. Mr. Paul, in his catalogue calls its colour "deep carmine;" while Mr. George Prince calls it "cherry-carmine," and very "sweet scented."

The colour of the one I possess, when the buds are opening, is of a beautiful and pure carmine, which I do not think any cherry ever possessed. As to scent, I have not discovered any in its flowers, and Mr. Paul does not mention any scent. Probably no two persons smell identically, or give the same name to the different colours they see. This Rose produces long shoots, fitting it for training on a wall, with long flower-stems, with never more than two buds, and generally only one. On the whole, it is a very satisfactory Rose, both for wall and cutting.

The other Rose I showed, Mr. Paul appeared to have some hesitation in naming. He thought it might be "Paul Perras," which I could not find in any catalogue; but in posting him two other Roses, the names of which I had not got, I included a third, to which he had previously given the name of "Paul Perras," for further consideration. He very kindly replied, "We take it (Paul Perras) to be H. E. Charles Lawson.

Whatever its name may be, it is a very fine wall Rose, with plentiful and beautiful foliage and abundant inflorescence. I first saw it in Seone, near Perth; and there it was called the "Old Cabbage Rose." It covered the whole face of a cottage, and was most effective with its hundreds of flowers. I never saw it anywhere else, and never met with it in any exhibition. I obtained some pieces of it, and am now the possessor of several specimens of it. It thrives as well here as in Scotland, and presumably it would flourish at all intermediate places. Its flowers are 3 inches across, of a deep rose colour, and very full, and scented. The first buds (owing, I suppose, to vigour) have a blemish in a green heart, which later on disappears. One of its main features is, that it is covered with foliage and flowers from top to bottom, while others become leggy and bare below, and furnished only at the top.

A good trellis Rose now in flower is Bouquet d'Or; it is like a second edition of Gloire de Dijon, but its whole colour is more of a buff-yellow, and without that charming mixture of pale pink and apricot of the Gloire. This Gloire de Dijon is said to be one of our finest and best varieties; but, curiously enough, mine do not answer to this description. I have five—one on south, two on west, and two on east walls; and in June, the "Rose mouth," I rarely ever get a decent bloom out of any of them. Four flower profusely in June, but the large majority of blossoms before they open turn brown and fall off. Mr. George Prince calls it "the hardiest of all the Teas, will grow in any position—a grand old Rose!"

One of the two on an east wall is a curious anomaly. I had it under glass, and it got covered with mildew, and it never flowered. I took it out and planted it on an east wall. This spring it made a show of vigour, and gave a number of young shoots, but soon the whole plant became again covered with mildew, and no blossom appeared. I have a suspicion that the Gloire de Dijon does not much like the sun of the south of England. Of two which are in partial shade, I got some fine blooms last autumn. I shall give it a trial on a north wall.

Then at the meeting of June 2 I took up three other good Roses, with the object of getting someone to tell me their names. One is of a shell-pink when it first opens, and turns paler the next day. It is of the flat-surfaced variety, and has the scent of the Otto Rose. At the meeting one gentleman said he was sure it was a form of the "York and Lancaster Rose." Another shook his head when I told him so. A third said it was related to the "Centifolia;" and four different persons asked me for cuttings of this Rose-tree. Evidently the scent and its colour took their fancy, as it originally did mine when I first saw it as a bush with hundreds of flowers on a lady friend's lawn at Seone.

The *Encyclopædia Britannica* says that the Otto Rose is *Rosa Damascena*, and my Rose is much like the Otto Rose I had seen in Lucknow, only the latter was more strongly scented. Messrs. Paul & Son give the Otto Rose in their catalogue under the name of "Kakalik." This is no doubt a misprint for

Kazanlik of Bulgaria. They call it "Provence Rose," but not improbably it got the latter name from being largely grown in Provence for perfumery.

Anyhow, the Rose of the meeting is a very decorative one. Its effect is very beautiful, especially after sundown. As I have twenty-five pillars of it, the place looks like numerous constellations. The effect is enhanced by the colour turning paler the day after the flowers open. Moreover, it is never touched by frost, not bothered by fly, and thrives under the rudest cultivation both in the north and south of Britain.

The second Rose of the last meeting is a good climber, probably of the Polyantha section, for I counted as many as eight buds on one stalk. It has fine foliage; its flowers are 2½ inches across, of a deep rose colour, turning purplish as its prime passes. Some one wrote on the card I put to it, "De la Griferia;" but this name is not in any catalogue I have. [It is used as a stock for other Roses, &c.]

The third is a very interesting and exquisitely tinted Rose. It is flat, and about 3 inches across when fully developed. It has a pure white border, and a beautiful shell-pink centre, which colour does not fade even when the Rose is cut and placed in water. It somewhat resembles the colour of Psyche, but the pink centre of the latter fades. This is, I think, a great merit. The plant is almost thornless, only a thorn here and there. It is not a climber, but makes a good pillar 3 feet high.

These beautiful ancient and hardy Roses are being swept out of existence by modern rivals, which are often tender, and often difficult to grow in perfection. Would it not be a good thing if some wealthy person were to devote a couple of acres to a sort of archaeological museum of Roses which are now rarely seen, and found only here and there in cottages and old gardens? Many of them are very beautiful, and worth preserving from extinction. E. Bonavia, M.D., Worthing, July 1, 1901.

THE GROVE, STANMORE.

SHUTTERED by the noble trees and shady dells which summer and winter give such beauty and variety of scene in Mrs. Brightwell's garden, the many tender plants which it is her delight to acclimatise, or to use to beautify the garden, are favourably situated, and few of them turn out entire failures. The chief floral display lately was furnished by Rhododendrons and other shrubs, by Peonies, Iris, Roses, and others; but it is not to such plants that the visitor to The Grove has his attention called by Mr. J. W. Odell, the gardener there, who is most interested in uncommon species, on which he can exercise his knowledge of botany and of vegetable physiology, which has been a special study with him for many years.

One interesting bed has Iris hevigata, and a collection of hardy terrestrial Orchids, among which *Cypripedium spectabile* and *Orchis foliosa* have each had many spikes. At present in bloom are several forms of *Orchis latifolia*, *Listera ovata*, *Gymnadenia conopsea*, *Habenaria bifolia*, and some other species. On the rockery near by, among fine patches of many alpine, are two of *Linnaea borealis*, the Norwegian and the Canadian forms, the latter having the larger and rose-tinted flowers. Among all the showy Peonies, *P. albiflora*, a large single white with bright yellow centre, is a prominent object; *Orananche speciosa* is starting well as a parasite on a Broad Bean plant placed for it to grow upon, and other

species of *Orobanche* are thriving; the *Aquilegias* are very beautiful and in great variety; the *Tangier Pea*, and *Lord Anson's Blue Pea* as it is called, are in great beauty; the sweet-smelling *Martynia fragrans*, with its *Gesneria*-like flowers, are now not common in gardens, but are here very effective; *Nemesia strumosa* of various tints make beautiful undergrowth to a bed of *China Roses*; varieties of *Schizanthus* are going to be very showy, and *Heuchera sanguinea*, *Primula japonica*, *Galax aphylla*, the *Rock Roses*, especially the double red; the varieties of *Gum Cistus*, *Campanula*,

house, and partly in a cold frame. *Disa grandiflora* and *D. racemosa* have bloomed well; the pretty little white and lilac *Disa sagittalis* has bloomed annually for many years. Several of the *Satyriums* are about to flower; *S. carneum*, *S. coriifolium*, and others, and the white and fragrant *S. acuminatum* has been in bloom for several weeks, and is still good, a 2-foot spike rising above its singular fleshy, prostrate leaves. *Utricularia montana* is about to flower, and patches of the blue *Pinguicula grandiflora* in flower, and of *Drosera rotundifolia* represent interesting British plants.

JAPAN LILIES.

I beg to enclose a photograph showing five spikes of *Lilium rubellum* (fig. 15, p. 12), which were cut on May 15 from plants growing here in my Lily farm. The bulbs of these Lilies were only the remainder or refuse of our last year's exports, and I was surprised to get lovely flowers from such shrivelled, unsaleable bulbs. *Lilium rubellum* grows in the northern part of the Island of Xippon, from where come all the *rubellum* bulbs which are exported. Needless to say, the climate there



FIG. 17.—LILIAM BAKERIANUM — LOWE.

(see Royal Horticultural Society's "Lily Conference Report," p. 61)

Saxifraga, &c., all give fine displays of flowers. Among the hardy *Primulas*, *P. farinosa* is well in bloom.

In one of the plant-houses is a batch of *Disa tripetaloides*, a charming species, each plant having five or six elegant sprays of bluish-white flowers, one form being unspotted, and the other densely spotted with rose colour. This species, here so beautiful, is often considered a small-flowered kind not worth growing, but evidently the quality of its flowers depends on the grower. As seen here they make a charming display. Mr. Odell is very successful with Cape terrestrial *Oreohids*, growing them partly in a light cool-

Overhead in one house, *Aristolochia ornithocephala* and *A. trilobata* have many of their singular flowers; and among other plants remarked were the singular-looking *Ceropegia d-bilis*, recently illustrated in the *Gardeners' Chronicle*; *C. Woodii*, the purple typical form of *Swainsonia coronillaefolia*, and its commoner white variety; *Lotus Jacobaeus* with blackish flowers, and a number of interesting things not usually seen in gardens, together with some of the showy species of *Oreohids*, among which some very large specimens of *Dendrobium Dalhousienum* have each had a profusion of their large, showy flowers.

is much cooler than here in Yokohama, and therefore these Lilies are particularly well adapted for our home climate.

Mr. Peter Barr, the famous *Narcissus* cultivator of London, who, during his stay in Japan made a special study of Lilies, in a letter to me says: "When in New York, 1898, I saw *The Garden* plate of this Lily. I thought it a form of *Lilium Kramerii*, but since seeing *Lilium rubellum* flowering in Japan, I consider it a good species, and am sure it will be extensively cultivated when better known and its culture understood. I cannot conceive of anything more beautiful than a 5-inch pot with three plants of this lovely Lily in flower in the

month of April, or early in May. It is one of the earliest Lilies, flowering a month earlier than *Lilium Kramerii*. It grows about 1 foot high, compact and elegant, the colour of the flower is more or less that of *Lilium Kramerii*, but the height is about one-third, and the leaves are shorter and paler green. . . . I feel therefore no hesitation in recommending that *Lilium rubellum* in pots should be grown in poor, stony, sandy loam, with at least 2 inches of drainage, and very judiciously watered from the time of potting. The soil must be kept moist, but never wet, and success will be sure to follow. Out of doors I would recommend a northern or eastern aspect, and failing this, plant under deciduous bushes where the roots in winter will keep the bulbs comparatively dry, and shade the plants from the hot sunshine in April and May.

"I think you should caution your readers against exposing the bulb to a dry atmosphere, the scales are thin and soon shrivel, therefore if they cannot be potted-up or planted out at once, they should be buried in dry soil or placed out of doors in a northern aspect, where they will take no injury from the weather, and the bulb kept plump." *Alfred Unger (L. Boehmer & Co.), Yokohama, Japan.* [*Lilium rubellum* was originally figured in our columns in 1898, Ed.]

MR. PETER BARR, V.M.H.

(VICTORIAN GOLD MEDALLIST IN HORTICULTURE, LONDON.)

THESE are travellers and travellers, there are visitors and visitors. Of one class it may be said they come and go, and are remembered no more, nor do they remember much besides the names of the hotels at which they had put up their quarters. There are, however, travellers who travel and visitors who visit, and wherever they go they see something, they learn something, and they teach others to see. They take away treasures of knowledge, and they leave behind pleasant memories of their sojourn, however short it may be. To the latter class Mr. Peter Barr may undoubtedly belong; but, "who is Peter Barr, anyway?" some readers will ask with or without the inebriant Americanism, and they shall be answered.

Mr. Peter Barr is a genial, sprightly Scotchman, who wears a Tam O'Shanter cap and looks like a man of fifty, but tells you he is seventy-five years old. He is as active and alert as a youngster, and as full of information as a sage. He is as ready with anecdotes as an Arabian, and as fond of a joke as one could well be who owns to having been born near Glasgow. By the way, he explains that the common idea that a Scotchman cannot see a joke is quite wrong, and merely applies to the joke of an Englishman. In writing an account of an interview with him, an American florist's paper quoted from the "Street Minister" to the effect that "it will be to be hoped he has been given the tear of God, for of a truth the fear of man has been withheld from him." If one may judge the honesty of his opinions by the candour of his criticisms, the American interviewer was about right.

Mr. Barr was brought up as a fruiterer and seedsman in Glasgow, and eventually became the head of a seed and bulb business in London in 1861. About two years later he commenced to work on bulbs, and became an enthusiastic gardener, devoting his attention especially to hardy garden plants, Lilies, Scillas, Hellebores, and other favorites. He did much to make Lilies popular, but his name has been more prominent in connection with *Daffodils* than in connection with anything else, and he is known throughout the bulb world as the "Daffodil King." He explains the origin of that designation, of which he is as proud as a modest Scotchman can be of a deserved honour, in this way. When he was in the full bloom of his work with the *Daffodils*, Dr. Masters, the editor of the *Gardener's Chronicle*, visited his nursery to obtain twelve of the very best *Daffodils* for description. Mr. Barr took his knife and said: "Well, you must select them, for I really do not know which are the very best. I have over 500 species and varieties, and several millions of bulbs." They started round, and the doctor selected this one and that until the labels were exhausted. Then the assistant had to get a box and a new supply of labels, and when Dr. Masters had to leave he caught his team he had a box full of the "very best," and had been about half way round. In next issue, instead of a description of a few of the best *Daffodils*, there appeared an account of Mr. Peter Barr and his work under the heading of "The Daffodil King."

Three years since Mr. Barr handed over his London seed, bulb, and plant business to his sons, and has

spent the time in travel in Japan, America, the South Seas, New Zealand, and the Eastern States of Australia. Previous to that he had travelled all over Europe collecting wild Narcissus and Peonies, and had devoted special attention to Spain and Portugal, where he was rewarded by discovering some beautiful species of Narcissus.

Mr. Barr is a traveller with many interests and unflagging energy. He has been in Adelaide nearly a month, and every day has been occupied giving and receiving information. *The Garden and Field, Adelaide.*

OSMASTON MANOR, ASHBOURNE.

THE seat of Sir Peter Walker, Bart., is a place which may well claim the attention of all lovers of natural and artistic beauty, as both nature and art here combine to make the place what it is. The massive grandeur of the building, picturesque situation, and fine surroundings, cannot fail to impress all visitors. In the writer's opinion there is no other gentleman's residence in the fine county of Derby, taking into consideration all its features of interest, which can claim an equality, of course leaving out Chatsworth, The Palace of the Peak.

At the recent reopening of the gardens, all who entered were at once impressed with the beauty of the scene which opened out before their vision. On gaining the front of the mansion, a magnificent stretch of scenery opens out before the eye. In the distance are two fine stretches of water, abounding in fish and aquatic birds of various kinds. On the other side of these lakes are woods, covering from 130 to 140 acres, the trees of which approach close to the verge of the water. Beneath these trees and forming an extensive undergrowth, are thousands of magnificent clumps of *Rhododendrons* and *Azaleas*, which in early summer furnish a gorgeous mass of colour.

At the Osmaston entrance to the park is a fine avenue of Lime-trees; and dotted about the park are clumps of ornamental trees, among which the double pink and new scarlet and white-flowered *Thorn* figure prominently. The scarlet Chestnut, *Aria Theophrasti*, several pretty varieties of *Ilex*, some splendid groups of Copper Beech, *Castanea vesca*, Turkey Oaks, and many others; these all add features of interest to the landscape. There are also some fine specimen Conifers which claim notice. Amongst them I noticed some fine trees of *Abies nobilis*, *Sequoia gigantea*, *Abies Nordmanniana*, and some grand specimen *Deodars*. On entering the ornamental grounds, we find that great alterations and improvements have been effected. As you pass in there is a border of scarlet-flowered *Rhododendrons* which has a pleasing effect. Then the judicious planting of ornamental foliage and other plants, such as the *Laburnum*, *Cornus variegata*, *Thuja aurea*, some fine varieties of Japanese Maples, the white Persian Lilies, *Deutzia*, &c., are prominent and striking features. The new Rose-garden, planted with new and approved varieties of Roses, exhibits the plants in the best of health. From the front of the mansion the scene presents many fine features. On the terraces are planted choice *Rhododendrons*, *Azaleas*, &c., in fine variety. In the park, below the terraces, is to be found the noted herd of wapiti, elk, and red deer, and on one of the opposite hills Japanese deer may be seen, these animals really appearing to be acclimatised in their new home.

The rock garden is a pretty and very naturally constructed feature of the place, as is also the greenhouse fernery, built of tufa. A border was remarked which is also dotted with Japanese Maples and early-flowering *Rhododendrons*, having Lilies in the background, and *Myosotis* forming the edging.

The large conservatory contains fine plants of Palms, Orange-trees, Yuccas, Tree Ferns, and others; and climbing plants are profusely made use of. At a little distance from the conservatory, on the front wall of the mansion, is found one of the largest *Rosa Banksiae* in the county.

The place is well found in vineries and other forcing-houses, pits for Melons, Cucumbers, for plants, &c., and all the usual appointments of a country gentleman's well-ordered establishment. Mr. Barmey is the gardener. A. W. G.

CALIFORNIAN LILIES AND THEIR HABITATS.

THE native haunts of the wild Lilies of California are, with one exception, confined to the mountain regions of the State, that exception being the seaside-dwelling *L. maritimum*, which occurs in swampy soils only along the coast-hills. Unlike some other of our Californian Liliaceous genera, these plants are never met with in the rich alluvial bottom-lands of large and fertile valleys.

Topographically, the State of California may be described as consisting of a great central valley, about 400 miles long, and from 40 to 60 miles wide, surrounded by high mountain chains; that on the east, the Sierra Nevada, being the highest; those on the west, the Coast Ranges, being lower, and often cut up into subsidiary ranges, separated by comparatively small longitudinal valleys. The region south of the southern end of the Great Central Valley, and separated from it by a western continuation of the Sierra Nevada, known as the Tehachapi Mountains, is climatically and phylogenetically distinct from the rest of California, and is generally distinguished under the name of Southern California. The flora of this region has pronouncedly distinctive features, xerophytic plants occupying a prominent place in the vegetation, which evidently forms a part of the same flora which covers a large part of adjacent Mexico and Arizona, and extends eastward through New Mexico to Western Texas.

On account of the large area of the State of California (about 750 miles long, and 200 miles wide, covering in all some 158,000 square miles), and its peculiarly varied topography, the writer has not yet enjoyed the privilege of visiting all of the Lilies in their native haunts; he has therefore been obliged to draw freely from the observations and records of others.

Only one species of *Lilium* is found to occur over the whole of the State from north to south, and east to west, and that one does not occur in the great valley regions. The remaining eight or nine species are peculiarly restricted in their distribution; two are strictly confined to the coast range region of middle and northern California, and may be called maritime species; three are confined to the Sierra Nevada of middle and northern California; two are strictly southern, belonging to the flora of southern California, Arizona, and Mexico; and one, though apparently most abundant in southern California, is also found in the foot-hill region of the northern Sierra Nevada.

MARITIME SPECIES.

1. *L. maritimum*, Kellogg ("Coast Lily").— Apparently restricted to the immediate vicinity of the ocean, on the coast bluffs from San Mateo co., near San Francisco, to Humboldt co., and said to be seldom found further than 2 miles from the ocean. Its habitat is peat bogs or moist sandy soils, often in company with *Lomaria spicata*. It flowers from May

to August. The height varies usually from 1 to 3 feet, but it is occasionally only 2 to 4 inches, and sometimes as much as 5 feet; the flowers are usually one to five, occasionally ten to fifteen, of a deep blood-red spotted with purple, yellow, and more decidedly spotted below the anthers with cinnamon-coloured pollen.

2. *L. rubescens*, S. Watson ("Redwood Lily").—Restricted to the narrow strip of coniferous mountains for about 200 miles north of San Francisco, where it is found on wooded slopes or high, dry, and scarcely accessible

the summit as many as twenty-five flowers; these are at first pure white, dotted with purple, but soon take on a metallic lustre, and begin to turn to a delicate pink, which gradually deepens into a ruby-purple. Carl Purdy mentions having seen a specimen 9 feet high, bearing thirty-six flowers.

SIERRAN SPECIES.

3. *L. Washingtonianum*, Kell. ("Washington Lily," "Shasta Lily").—Restricted to the Sierra Nevada Mountains and Mount Shasta, from about 3,000 to 6,000 ft. altitude, in loose

time, where the streams, fed by the snow lying in shadowy mountain fastnesses, gush through emerald meadows, starred with millions of Daisies, and bordered by luxuriant tangles of Larkspurs, Columbines, Monks-hoods, Lupines, and a thousand other charming plants—a veritable flower-lover's paradise. Here, from the thickets, standing with their roots in the rich, loamy soil of the brookside, gleam the small orange-blossoms of the little Alpine Lily—little only in flower, for the slender stems often rise to a height of 6 feet, producing several whorls of rich green leaves.

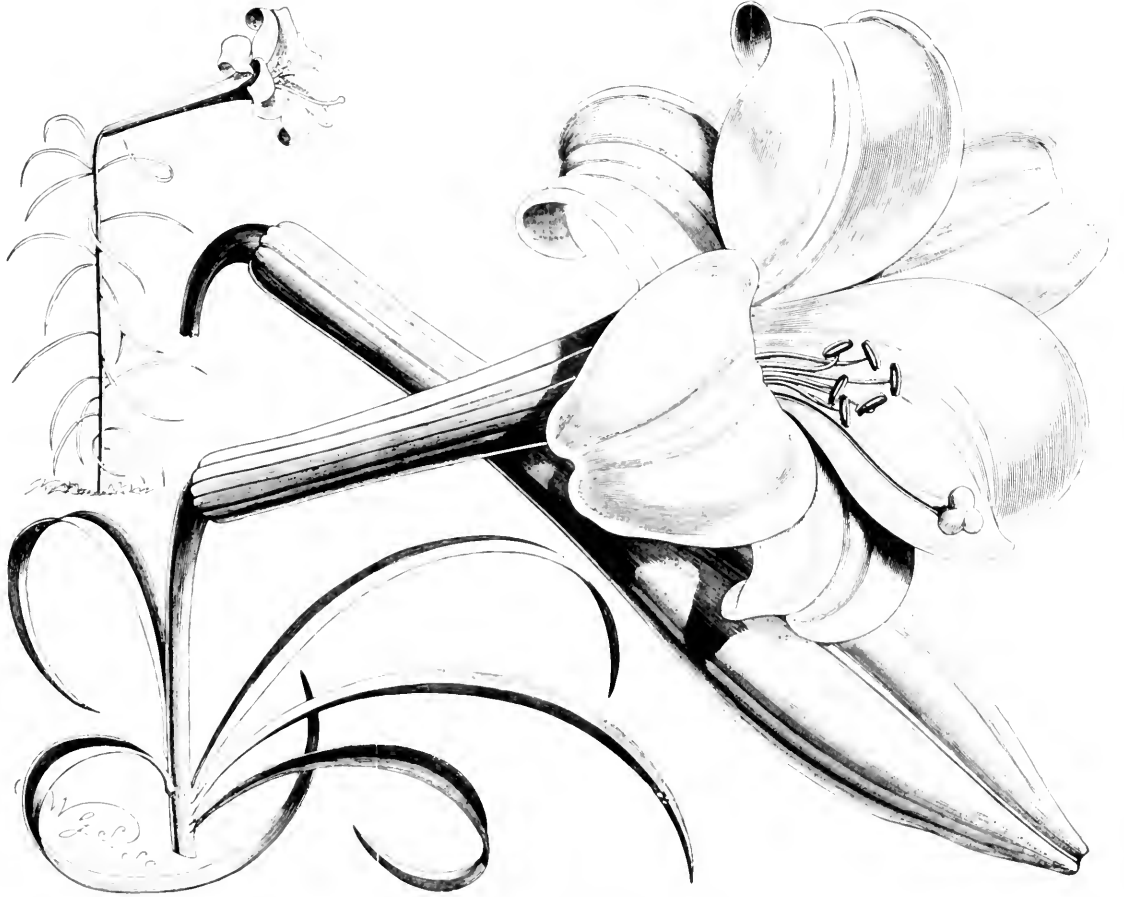


FIG. 18.—LILUM PHILLYENSE: FLOWERS WHITE.

mountain ridges, among brush, or beneath the Live-Oak (*Quercus agrifolia*) or Redwood (*Sequoia sempervirens*). Of this species Miss Parsons writes in *Wild Flowers of California*:—"This is the most charming of all our Californian Lilies, even surpassing in loveliness the beautiful Washington Lily; and it is said to be the most fragrant of any in the world. It resembles the more familiar *L. Washingtonianum*, but its flowers are fuller in form, with wider petals and shorter tube, and it has a smaller bulb. It sends up a noble shaft, sometimes 7 feet high, with many scattered whorls of undulate leaves, and often bears at

soil on rather dry ridges, or lightly shaded hills in open coniferous woods. The stems are about 4 feet high; the flowers sweet-scented, at first pure white or sparingly and finely dotted, becoming purplish in age; flowering, July.

4. *L. parvum*, Kell. ("Little Alpine Lily"). This has almost the same range as *L. Washingtonianum*, but at higher altitudes in the mountains (1,000 to 8,000 ft.), and in moister situations. "Passing from the parched and dusty plains of our central valleys in July and August," writes Miss Parsons, "we are transported . . . into a heavenly region of spring-

These Lilies are but an inch or an inch and a half long, with their perianth-segments yellow or orange below and deeper orange-vermillion above, their tips only being rolled backward."

In his charming book, *The Mountains of California*, John Muir describes the habitat of the alpine Lily as follows:—"Speaking of the great coniferous forests of the Sierra Nevada he says, "It is in these woods the great granite domes rise that are so striking and characteristic a feature of the Sierra; and here too we find the best of the garden meadows. They lie level on the tops of the dividing ridges, or sloping on the sides of

them, embedded in the magnificent forest. Some of these meadows are in great part occupied by *Veratrum album*, which here grows rank and tall, with boat-shaped leaves 13 inches long and 12 inches wide, ribbed like those of a *Cypripedium*. Columbine grows on the drier margins, with tall Larkspurs and Lupines waist-deep in grasses and sedges; several species of *Castilleja* also make a bright show in beds of blue and white Violets and Daisies. But the glory of these forest-meadows is a Lily—*L. parvum*. The flowers are orange coloured and quite small, the smallest I ever saw of the true Lilies; but it is showy nevertheless, for it is 7 to 8 feet high, and waves magnificent racemes of ten to twenty flowers or more over one's head, while it stands out in the open ground with just enough of grass and other plants about it to make a fringe for its feet, and show it off to best advantage.

"A dry spot a little way back from the margin of a Silver Fir Lily garden makes a glorious camp-ground, especially where the slope is toward the east, and opens a view of the distant peaks along the summit of the range. The tall Lilies are brought forward in all their glory by the light of your blazing camp-fire, relieved against the outer darkness, and the nearest of the trees with their whorled branches tower above you like larger Lilies, and the sky seen through the garden opening seems one vast meadow of white Lily stars."

Lilium parvum appears to be the Sierra counterpart of *L. maritimum* of the coast; it flowers in June and July. A variety *luteum* was described by Carl Purdy in *Erythra*, v., 105 (1897).

L. columbianum, Hansen, has a more northerly range than either of the two last named, being of frequent occurrence in the States of Washington and Oregon, and extending southward into the middle Sierra Nevada of California. It flowers in August.

SPECIES OCCURRING IN BOTH THE COAST RANGES AND SIERRA NEVADA.

The most abundant and widely distributed species in California is (*Lilium pardalinum* (see fig. 16, p. 43), the "Californian Tiger Lily," Kellogg, which, unlike the other species referred to, is common alike in the coast-range mountains and in the Sierra Nevada. It is found along shaded streams, the bulbs being often deep-seated among rocks and debris brought down by the streamlets. It occurs from about sea-level up to 4,000 feet altitude, and flowers in July and August.

The variety *L. angustifolium*, S. Watson, is characterised by its very narrow leaves, and though not commonly met with, appears to have a wider range than the more typical form, occurring from Southern California to Oregon.

L. occidentale, Purdy, *Erythra*, v., 103, 1897, is a little-known species. (See p. 42.)

SOUTHERN CALIFORNIAN SPECIES.

L. Humboldtii, Roetz and Leichtlin.—The complete range of this species is not yet recorded, but from the data at hand it appears to be one of those southern plants which occasionally find their way north along the dry foothills of the Sierra Nevada, in what has been called the upper Sonoran zone; it has been recorded as occurring in dry open localities of the foothills, from 2,500 to 4,000 feet altitude, as far north as Butte co. It flowers in July.

L. Parryi, S. Watson ("Parry's Lily," "Lemon Lily") (see fig. 19, p. 57), appears to be more strictly Sonoran in its distribution, apparently being restricted in California to

the San Bernardino and San Jacinto Mountains, and extending eastward to Fort Huachuca in Arizona. This beautiful Lily is of a clear yellow colour, sometimes dotted with deeper yellow or with small purple-black spots, and has very fragrant flowers. Unlike *L. Humboldtii*, it luxuriates in moist, rich humus, along shaded stream bottoms, in cool cañons, or in marshes, and is said never to occur on dry hillsides, nor even on meadow bottoms; it is found at higher altitudes than *L. Humboldtii* (6000 to 8000 feet), and flowers in July and August.

L. Clevelandii, Greene, is a little-known species, apparently recorded only from one locality, viz., Laguna, San Diego co.

EXTRA CALIFORNIAN SPECIES.

Of the conditions under which the following extra-Californian species occur, the writer is unable to speak; they are merely enumerated here for the convenience of some lovers of Lilies who may wish to make a collection of all our forms from western North America.

11. *L. Purshii*, Wagh (L. Bakeri), Purdy, *Erythra*, v., 101, 1897), is recorded from Washington State and British Columbia.

12. *L. Bolanderi*, S. Watson, a little-known species, was described from material collected in the coast range, Mts. of Oregon.

13. *L. montanum*, A. Nelson, *Bull. Iowa Bot. Club*, xxxi., 6 (1899), is described from Willow Creek, Wyoming. *Jos. Bartl Bary, Assistant Botanist, University of California Agricultural Experiment Station, Berkeley, California, U.S.A.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. J. MEASURES, Esq., Cambridge Lodge, Flitton Road, Cambridge.

Temperatures and Ventilation.—The almost tropical heat that has prevailed has its beneficial as well as its harmful effects upon Orchids. It is favourable to Dendrobiums, provided enough humidity is maintained by damping the floors, staging, &c., and frequently syringing the plants. It is a difficult matter to meet the requirements of all species of plants growing together in a house, and to guard against a check being given by the fluctuations of the temperature. A low degree of warmth will but very few exceptions has ruled by night, and much care has been called for in maintaining the desired amount of humidity by day; and, on the other hand, to prevent injury from an excess of it by night, I have only been able to afford the proper conditions by applying a little more fire heat at night. This averts any drop in the temperature, when the plants are wet at the roots and the air is loaded with humidity, a fertile cause of a black spot. Let any deciduous Dendrobium once commence to "spot," and it will generally be found that little progress is hereafter made by such plants, which generally finish up their growths almost directly in an unsatisfactory manner; and growths thus checked often produce new growths at the base of the last one made, which usually appear when the days are getting shorter. Owing to the lack of light at that season, such growths generally mature badly; and when the flowering season arrives they yield but few flowers, and the succeeding growth suffers to a corresponding extent.

Cattleyas.—*Cattleya Warscewiczii* (gigas), C. Downiana aurea, and C. Gaskelliana, derive benefit from a period of bright warm weather whilst making growth, and I would recommend that the plants of these species be placed under brighter and warmer condition from the time growth begins; and I find that our plants are much benefited by being placed at the warmer part of the Cattleya-house. Under this regimen flowers are produced earlier in the season, and it becomes necessary to remove

them to a cooler house as soon as flowering is over, in order to prevent a second growth.

Cypripediums.—For these plants a mild moist season is more beneficial than one that is bright, dry, and hot. There are, however, a few exceptions to the rule, viz., C. Rothschildianum, C. Stonei, C. levigatum, C. Lowii, and the hybrids that have been derived from these. East Indian Orchids, viz., *Vandas*, *Aerides*, and *Phalenopsis*, succeed under most external conditions of the weather.

The cool division.—The difficulty has been hitherto in keeping the houses cool enough; but where the houses are situated on the north side of a wall, the difficulty is much less than is the case with houses having more sunlight. Houses not shaded by a wall should have the glass white-washed, in addition to using the ordinary blinds, and if mats be placed on the roof during the hottest parts of the day the inside temperature will be lessened.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bleton, East Endleigh, Devonshire.

Mushrooms.—Collect fresh horse-droppings and short litter for making beds towards the end of the present month. Only the dung of horses fed largely on Oats is of any use. I prefer to add two wheelbarrowfuls of soil to six of litter and dung when making up the bed. At this season beds may be made in any outbuilding or shed, and not necessarily in the Mushroom-house; also out-of-doors beneath trees, &c.

Pol Herbs.—Those dried herbs which are most in request during the winter should now be gathered, made into small bunches, and hung up in an airy shed or seed-room. Even when not required for winter use, the beds of Spearmint, Peppermint, Marjoram, and Sorrel, are the better for being cut over at about this date, new growth soon pushing up and becoming fit for use. The flowers of Camomile should be plucked as soon as they expand, and be placed in the shade thinly to dry before being stored in bags. Other herbs are the better for not being allowed to form flowers before they are gathered for drying.

Autumn-sown Onions.—Bend down the tops of the bulbs, and in about a fortnight afterwards remove and dry them before storing. The vacant land may be planted with Coleworts at 12 inches asunder, and unless it be very hard, no digging will be necessary.

Tanbuds.—Plants growing in pots or boxes will require close attention in affording water, two or three times a day being not too often during hot, sunny weather. Plants on which there are fruit may be assisted with manure-water. All side-growths, and any foliage that overshadows the fruit should be removed. If space can be found for a top-dressing of loam with a little bone-meal, it will be of great benefit. The outdoor plants are doing well this season; we have gathered several good fruits already. As soon as from four to six trusses of flowers have formed, nip out the leading point, and generally treat the plants in the manner directed for those under glass. Repeat seedlings raised last month.

Barbecole and Savoy Cabbage should be planted by the end of the month, affording them water until they are established.

Celery.—The earliest plants are ready for a slight earthing-up, but previous to doing this, thoroughly saturate the soil in the trenches one day previously, and remove lateral growths and suckers, with a few of the bottom leaves, and afford a dressing of lime and soot to the soil. In earthing-up a double row, one man should draw up the foliage of the plants close together, whilst two men, one on either side, puts the soil round the plants with the hands or a trowel, the soil being made fine; on no account should the soil be placed higher than the heart-leaves. The successional crop should be planted within the next ten days, or the produce will be poor. All unmoiled Celery should be afforded water twice a week, excepting when much rain falls. Moulded-up Celery may not require water

oftener than once a week, but it depends on the nature of the soil how often water must be applied; the lighter, the more water.

THE HARDY FRUIT GARDEN.

By C. HEEREN.

Summer Pruning.—The summer pruning of the Pear should now receive attention, earlier pruning not being advisable in view of a probable second growth being made; but after this date any danger of this kind will be small. During the late warm weather, growth has been rapid and strong in general, as with many kinds of Pears the crop of fruit is a light one. With a view of not inflicting a severe check on the trees which the removal of much growth causes, the pruning may be carried out in two or more operations, a good plan being to take the upper half of the trees first, where the strongest growth is usually found, and in a week or ten days later the lower portions. Cut, or rather by pressing the shoot with the thumb against the pruning-knife, sever the shoot with a sharp twist at about the fourth leaf from the base. The exceptions are leading shoots, which should be left at full length. Should moist, warm weather in the months of August and September cause a second growth in the pruned shoots, it will occur in the upper buds, while the basal two of the four may be trusted to remain dormant. Cordons should be similarly treated, the leading growths being secured in an upright or oblique direction, as the case may be, before it gets damaged by the wind. The leading shoots of fruit-trees growing on walls and fences should also be secured with shreds or bast, in order to secure symmetry in the tree, and prevent loss by wind.

Apricot, Peach, and Nectarine. The leading shoots should be made safe with nails and shreds, or bast ties, and the lateral ones by means of straight lengths of Privet, Willow, &c., thrust behind the older shoots. The shoots should be laid in so as to allow of the full development of the leaves. In very hot weather the sun is liable to scorch the fruits when close training is carried out; therefore it will be advisable only to secure the shoots from breaking by a temporary fastening, and allow the points to droop, which will afford sufficient shade to the fruits without spoiling their colour. The final thinning, where necessary, of late varieties should now be done. During hot, dry weather the trees should be syringed once a day, either in the early morning hours, or after 5 o'clock p.m. To do this will keep the trees free of red-spider and aphides. If the pests are now present on any of the trees, in addition to syringing with clear water, make use of the quassia decoction; but do not make use of this on any trees on which there are fruits that are colouring, which therefore cannot be well and often syringed with clear water after the quassia has been employed.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSLEY PARK, Esq.,
Prestwood Hall, Longhoughton.

Brick Pits and Cold Frames.—The plants occupying these structures, chiefly those which will flower in the winter, will need attention in various directions. Cyclamens, as the foliage develops will want more space to develop it, and until the end of August a cold frame will suit them. Afford the plants a daily syringing, applying the water to the lower sides of the leaves, give more air than hitherto, and slightly shade the plants in bright weather. Great care should be taken not to let the plants get dry at the root at this season, or they will fall to throw up their flowers well later on. Winter-flowering zonal Pelargoniums must be stood thinly in the frames, and all the trusses of bloom should be removed as fast as they appear. When the pots fill with roots afford weak manure-water once a week, and stand the plants in an exposed sunny spot. Plants of *Campanula pyramidalis* may be shifted into 32-sized pots, which to some may appear a large shift for a plant in a small 60,

but with good management it may be safely given, and obviates repotting, and is a saving of labour. Afford the newly-potted *Campanulas* during sunshine shade for a few days, and afterwards stand them in an open position. Surplus seedlings may be planted in firm, rich soil, where they should remain till the spring. They will give a succession of flowers to the plants earlier potted.

Primula stellata and P. sinensis.—The former and the double-flowered *Primula* are now ready for repotting, this time into the flowering pots; but do not let them get pot-bound first, or they will bloom prematurely. A suitable size of pot is a large 48, and the potting-soil should consist of loam one half, leaf-soil one half, with powdered charcoal and sand to give porosity. Let the balls go sufficiently deep to prevent rocking without using pegs, and put the plants in a frame turned towards the north; keep the frame rather close for a few days, then afford air more freely, and on fine nights for a period of two months remove the lights from the frames. Put off the remaining stock of seedlings of *P. sinensis*, place them in a cold frame, and generally treat them like the larger plants, syringing them late in the afternoon if the air is hot and dry, being careful not to afford an excess of water—this remark applies to all species of *Primula*. Prick off seedlings, affording them genial conditions, and a temperature at night not higher, if this be practicable, than 55° to 60°, and keep the frames moist by damping down the bed of coal-ashes and the sides of the frames.

Begonia Gloire de Lorraine.—This plant should forthwith be potted in 48's, the size in which they will flower. In potting, employ turfy-loam in a rough state, half leaf-mould, a quarter spent hops, with a little charcoal and sand. Make the soil firm, and to each plant put a small stake, to which the main growths should be fastened. A pit or frame having a temperature of 55° to 60° at nights, and 70° to 75° during the day, will suit this plant. Keep the frame close for a few days after repotting; syringe lightly several times a day, and shade whenever the sun is bright. Remove every flower as it appears, and encourage growth until about a month before they are wanted. Do not crowd the plants together, but keep them by themselves, and allow each ample space. Keep a sharp outlook for yellow thrips, and vapourise the plants occasionally as a preventive to aphids.

THE FLOWER GARDEN.

By T. H. STANT, Gardener to Lord Baltimore,
Potters Park, Exeter.

Funkias.—These plants are useful for forming edgings to large beds, and as clumps in the pleasure-grounds and in the wild garden; and the best species is *F. Sieboldi*, which is in flower at the present time. Its striking large foliage and creamy-like flowers, borne on spikes well above the foliage, make it a conspicuous plant when planted in masses. In some situations it should be mixed with other plants of an evergreen character, as when its leaves ripen off in the autumn the soil is exposed to an undesirable extent. The larger growing species are very effective for planting where they can be viewed from a distance, as their bold appearance makes them more noticeable than would be the case with smaller-leaved plants. Some of the smaller growing Funkias are useful and effective as edgings for large beds, especially the variegated kinds, such as *F. lanceolata*, *alba marginata*, *undulata variegata*, and *undivitata*; there is also a variegated variety of *Sieboldi*. Species which flower late in the year are *F. ovata* and *F. grandiflora*. All the species are easily increased by division in the autumn or late winter, and they thrive in any fairly good garden soil, but attain their largest dimensions in a deep, fairly moist soil, and they will grow satisfactorily in moderately shady places.

Glabriolus are showing for flower, and should be made secure to new upright stakes, the flower-shaft being easily broken off. It pos-

sible, afford them liquid-manure at this stage, as by so doing the spikes are greatly improved in strength, and the flowers in size.

Specimen Plants.—Hollies, Sweet Bays, Thuas, &c., may be pruned into shape, rampant shoots and rival leaders being shortened with the knife. It may in some cases be prudent to secure a leader to a thin stake fastened to the stem, so as to prevent the birds from snapping it off. Plants growing in tubs will require water frequently, and a light mulch of spent Mushroom-bed dung, which will save much labour in applying water, and at the same time afford a safe kind of nutrient.

Summer Bedding.—The recent rains have benefited the plants exceedingly, but they will have caused the soil to cake, hence the hoe should be got to work wherever possible. Beds in which are plants that require to be pegged down to the soil should have the surface loosened first. Pinch the shoots of *Pyrethrum*, *Alternanthera*, *Coleus*, and other plants of low growth, whether planted in carpet-beds or as edging. *Königia maritima variegata* is a plant that should not be pinched, as each shoot produces flowers, and pinching would remove the terminal flower-heads. Regulate and peg down the shoots of Ivy-leaved *Pelargonium* frequently, so as to get the beds covered quickly.

FRUITS UNDER GLASS.

By MALCOLM M. STAYE, Gardener to SIR CHAS. TASSER, The Glen, Inverlathie, Peebleshire.

Vines in Pots for Early Forcing.—Vines being required for fruiting next year should have completed their growth by this date, especially those for fruiting early, which should have no more water than will prevent the foliage from becoming limp, and should be exposed to the fullest sunlight. Red-spider will probably appear on the leaves, and these must be syringed occasionally in order to cleanse them, if being of importance that the leaves remain in a healthy state to the last. After the Vines have become brown and firm, stand them against a south wall, to which make them secure.

The earliest-fruiting Vines should now be afforded a dry atmosphere to ripen the wood, but artificial heat will not be necessary, sufficient heat being obtainable by regulating the ventilators according to the state of the weather. Avoid a close atmosphere, especially by night, as this would have the effect of causing laterals to push, and keep the laterals and all late growths checked, and compel complete rest by keeping the vinery cool and dry. A drier condition of the border at this season is likewise desirable, although the soil should not become parched, which however is not likely to happen if a mulch has been afforded.

Muscat Vines with Ripening Fruit.—These will need fire-heat to insure a temperature of 70° to 75° by night, and 85° to 90° by day, with air in abundance. The air in the house should be kept drier, as under no other conditions will the fruit acquire that rich golden tint that accompanies fine flavour. The Muscat Vine requires abundance of water at the root, and so far as my experience goes, more than any other kind of Vine. I know of gardens in which Muscat Grapes are grown of the finest quality and quality, that have the borders flooded with water almost every week when the fruit is swelling, and during the early part of the finishing stage; indeed, they can hardly be overdone with water at the roots after the leaves have reached their full size until the Grapes are well advanced towards ripening, provided the border has thoroughly good drainage. Attend, therefore, to affording water to inside and outside borders in dry weather. Much aerial moisture in the vinery is injurious to Muscat Grapes when ripening, causing them to spoil; and it is very necessary to apply a gentle artificial heat and a small amount of air constantly, to prevent moisture settling on the bunches. After the final application of water, afford a layer of a few inches in thickness of dry bracken or Out-straw.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 23:—(Dulham, North, and Newmarket-Tyne Botanical and Horticultural Society's Show (two days).

WEDNESDAY, JULY 24:—Boston (Lincs), Horticultural Show. Messrs Johnson's Cullinary and Sweet Pea Show (two days). Southern Counties Carnation Society's Exhibition at Southampton.

THURSDAY, JULY 25:—National Sweet Pea Society's Exhibition at Royal Aquarium, Westminster.

SALES.

FRIDAY NEXT—Imported and Established Orchids, and Palm Seeds, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—63.4.

ACTUAL TEMPERATURES.

LONDON.—July 17 (P.M.): Max. 81; Min. 60.
July 18—Fine, hot
PROVINCES.—July 17 (P.M.): Max. 81, Home Counties; Min. 61, N. Wales.

Lilies and the Conference.

At the present time the species of Lily, properly so-called, exclusive of varieties, and cultivated in British gardens, amount to about fifty, and there are several more awaiting introduction. LANSBETS (1753) knew but seven. All are interesting, and most of them beautiful. There are but few which the fastidious cultivator would care to eliminate. Some of them are easily grown—some are difficult. Some are recognisable with facility; of others, the determination is puzzling. Now that cultivators, like Barlank, have begun to hybridise them, the puzzle will become still greater.

In addition to the hybrids known in Europe, which are few in number, the great Californian hybridiser announces in his catalogue for 1901, that he has ten thousand hybrid Lilies produced on his grounds! It is really consoling to know that only the best of these are now being selected, for under the name Barlanki \times various forms have been introduced. One of the very finest hybrids, L. \times Parkmanni, figured on p. 52, is, we fear, no longer in existence.

The great impulse to the cultivation of Lilies was given by Mr. ELWES, whose sumptuous monograph published in 1880, is a model of what such a publication should be. Mr. ELWES is a gardener, and an observant traveller, as well as a botanist. He has recognised the immense importance of studying the living plant in all the phases of its existence, as well as in all the details of its structure, and of observing the "evolution" which takes place when the plants are brought under cultivation. There

are some, indeed there are many, plants that cannot be satisfactorily studied in herbaria. Imperfect skeletons or mummies are not enough. The whole life history requires to be known, especially for purposes of cultivation; and this is especially true of bulbous plants, and of Lilies in particular. Urged by considerations like these, and aided by the counsels of BAKER, DURANTIE, and other specialists, Mr. ELWES set to himself the task of cultivating all the species he could obtain, of describing them, and of getting them figured by the skilled pencil of the late W. H. FITCH.

What has been done since by himself and others was detailed at the Lily Conference held on Tuesday last, at Chiswick.

Apart from the fine collection of Lilies shown by MESSRS. WALLACE, of Colchester, at Chiswick, on the 16th instant, the exhibition was not so particularly remarkable. MESSRS. VEITCH & SONS and BARR & SONS showed Lilies proper, and Water-lilies which are, of course, not Lilies at all. MESSRS. WARE, AMOS PERRY, and others showed herbaceous plants in variety. But the chief interest centred in the luncheon given by the President and Council, the only opportunity which occurs in the year for the Council to meet officially and thank those committees who throughout the year, in season and out of season, give their services without fee or reward. Sir TREVOR LAWRENCE appropriately expressed the thanks of the Council, and Mr. A. DEAN tactfully responded for the committees. This function over, the tents were cleared for the meeting of the Conference, which was presided over most fittingly by Mr. ELWES. Our report will show that the proceedings were of a very interesting and valuable character.

Mr. BAKER gave a summary of the botany of the genus since the publication of Mr. ELWES' Monograph. Dr. HENRY, the intrepid explorer and indefatigable botanist, gave a most valuable account of the Lilies of China, and the conditions under which they grow. He was followed by Mr. YELD, who contributed a paper on the cultivation of Lilies in the open, which, like that of Mr. WALLACE on pot Lilies and their culture under glass, will be of the greatest value to cultivators. Captain SAVILLE REID followed with a similar paper, which growers will study with interest; and Mr. MASSEE, in somewhat too satiric vein, considering the occasion, amused his audience by discoursing on the diseases of Lilies and the best methods of prevention.

We have always looked on these conferences as the direct outcome of the Botanical Congress held in London in connection with the memorable exhibition of 1868, from which also the Scientific Committee may be looked on as a direct derivative.

Be this as it may, these conferences, of which there have now been many, decidedly constitute the greatest claim which the Society will have on the gratitude and admiration of posterity. Chiswick trials will be relatively valueless in years to come, Temple shows, Drill Hall meetings, and other exhibitions are of service for a very short period only, and must be constantly superseded by others; but the conferences and their record in the *Journal* of the Society, constitute a permanent body of information practical, scientific, and historical, the like of which it would be impossible to find elsewhere.

AN AMATEUR'S SUCCESSSES.—Mr. OSMOND G. ORPEN, West Bergholt, Colchester, Secretary of the Colchester Rose and Horticultural Society, and well known as an exhibitor of Roses at the National Rose Society's and other shows, informs us that his record in six shows this season amounts to thirty-one prizes, composed of twenty-three 1sts, six 2nds, and two 3rds. At Woodbridge Mr. ORPEN won 1st prizes in four of the leading classes for amateurs, and one 2nd prize.

DON MIGUEL COLMEIRO, founder of the Botanical Garden at Seville, and later Director of the Botanical Garden Madrid, and Professor in the university of that city, who was also the author of several works on the flora of Spain, died on June 21st of the present year, aged eighty-six years. In former years the Professor occasionally contributed to this journal.

THE "TEMPLE" ROSE SHOW.—We are glad to hear that the financial report is satisfactory, and that the guarantors are not likely to be called on for any contribution.

THE REPLANTING OF BULBS.—Col. WHEATLEY writes: My remarks on this subject were incorrectly reported in your issue of June 22. What I actually said was as follows:—

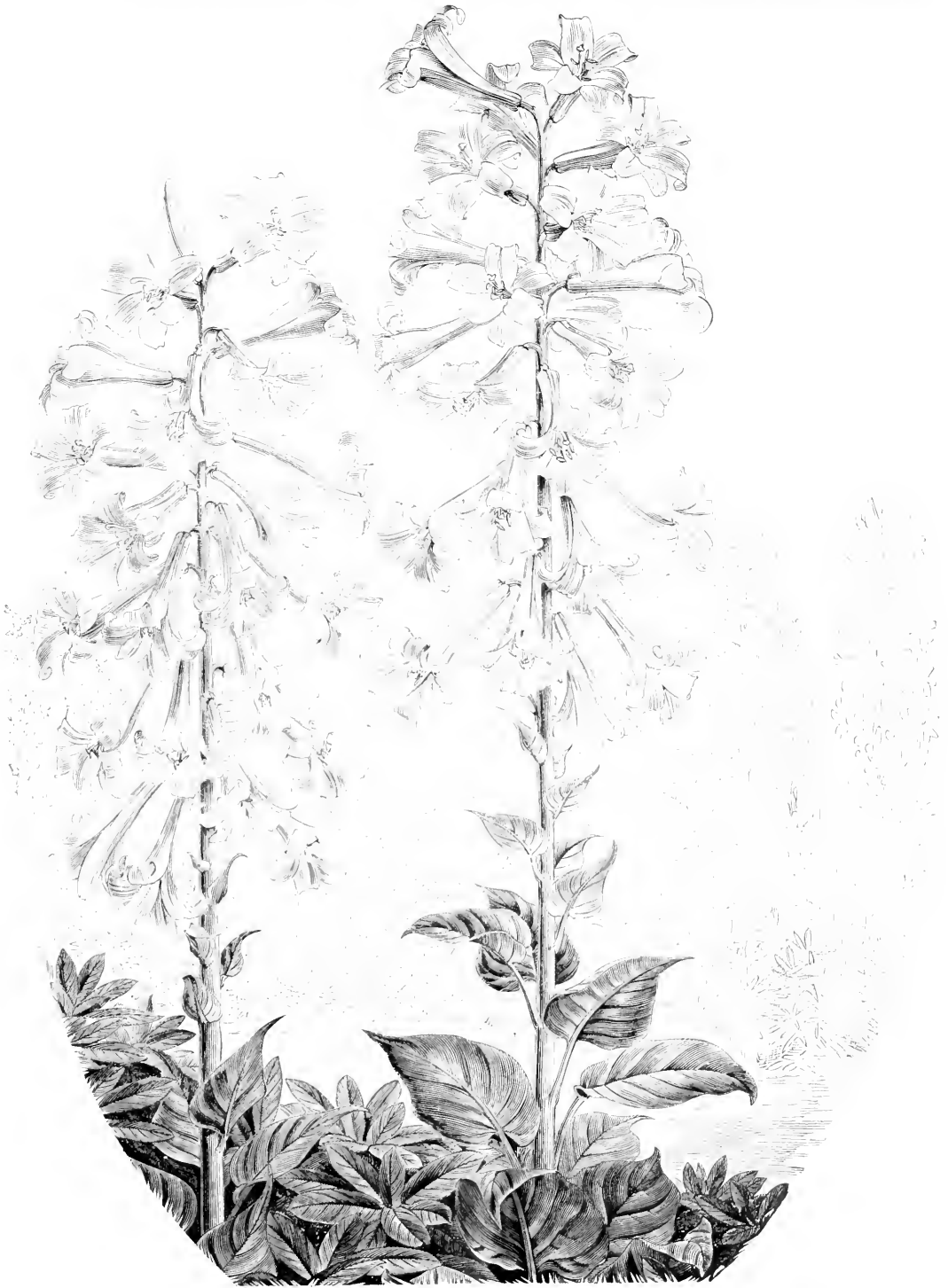
"A large number of new bulbs are purchased every year, the quantity required may be imagined when I tell you that to fill some of our beds 4,000 Tulips are required, and from 2,000 to 3,000 Hyacinths. In the case of the beds in Park Lane new bulbs entirely are necessary. New and old cannot be mixed, as the latter come into flower so much earlier than the former, and the result is that the cost of our bulbs in Park Lane alone is usually between £200 and £400 each season.

"I may here mention that we have always to take out our bulbs before they have properly ripened and died down in order to get in our first summer crop, and consequently we lose a large number that might otherwise be saved. Every care, however, is taken to preserve them. They are arranged in shallow trays in a dark, well-ventilated shed, and in the case of Tulips they are covered with ashes to check evaporation during the summer. These old bulbs are used principally next season for herbaceous borders, &c."

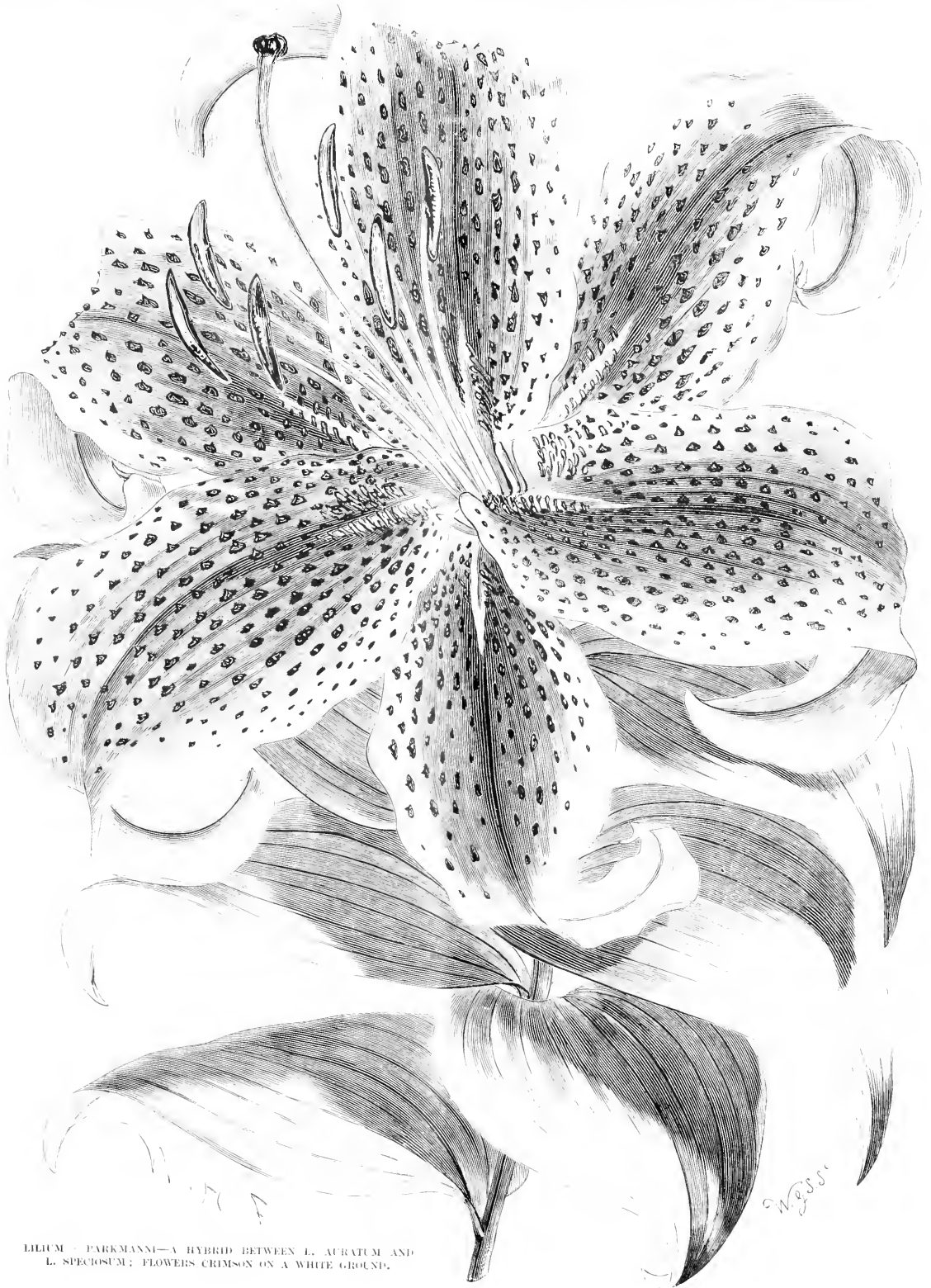
It should be understood, as regards the annual cost of new bulbs in Park Lane, "between £200 and £400," that the principal portion is for Hyacinths, which, as Sir WILLIAM DYER admits, cannot be grown at Kew. M. J. Wheatley.

GEORGE NICHOLSON.—The news of the retirement of this gentleman from the Curatorship of the Royal Botanic Gardens, Kew, on the score of impaired health, will be received with more than ordinary concern. His wide and accurate botanical knowledge, his skill as a gardener command universal respect, whilst his qualities as a man and a colleague have long since won for him the affectionate regard of all who have come in contact with him. That such a man should be leaving Kew, for such a reason, is truly distressing. Some means will, we hope, be adopted of testifying the admiration felt in the horticultural world, for one whose long career at Kew has been one of sympathy and well doing.

THE LATE EXHIBITION AT BOSTON, U.S.A.—Prof. SARGENT writes, concerning the show which inaugurated the newly-erected hall:—"There were some novel and to me interesting features in this exhibition. The chief of these was the voluntary sinking of all individuality on the part of the exhibitors, that is, they put their plants in my hands, and allowed me to arrange them with reference to the best general effect, without any reference to ownership, which in no way has appeared in the exhibition. All the Orchids from a dozen owners were massed together in a way to produce the best possible effect, and the same is true of other exhibits. The new halls worked well as to light, ventilation, and temperature; and the scheme of a dirt floor in the large hall, into which teams



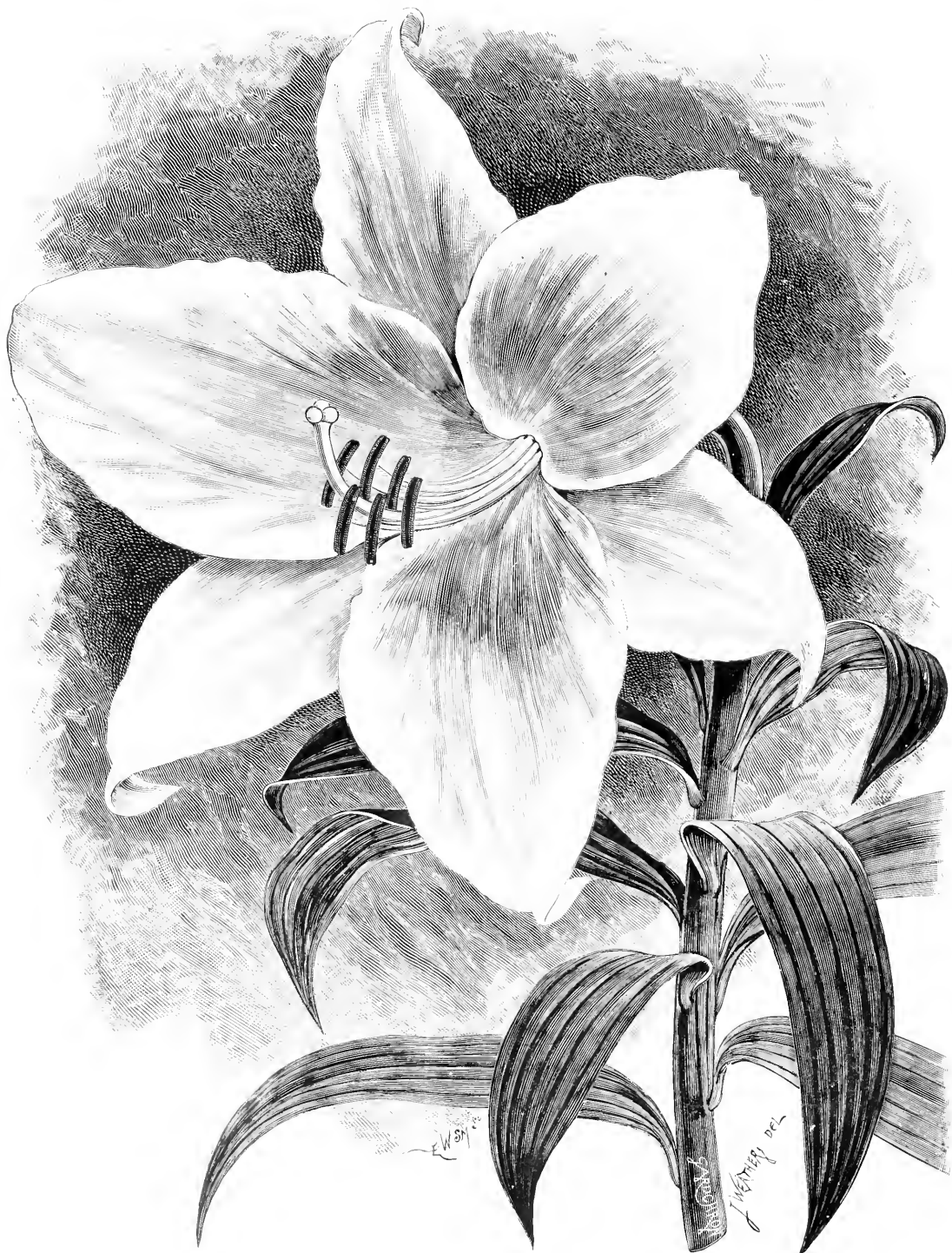
LILIAM GIGANTEUM — HEIGHT ELEVEN FEET; FLOWERS WHITE.



LILIUM - PARKMANNI—A HYBRID BETWEEN *L. auratum* AND
L. speciosum; FLOWERS CRIMSON ON A WHITE GROUND.



LILIU NEILGHERRENSE: FLOWERS CREAMY-YELLOW.



LILUM JAPONICUM VAR. ALEXANDRE: FLOWERS WHITE.

with the plants are driven directly from the street, is an admirable one, and permits the exhibition of much larger plants, and a more natural arrangement than has been possible before in this country. This idea I borrowed, of course, from Ghent. The high and well ventilated hall with electric fans is a great improvement on a tent, which generally becomes unbearable in the middle of the day from our hot sun, and in which plants do not last so long as they do in this new hall."

HARVARD UNIVERSITY.—Here is an announcement which will give the greatest pleasure to those on this side of the Atlantic who have had the opportunity of appreciating the work of Professor SARGENT. At the "Commencement" held on July 1, President ELLIOT conferred the degree of Doctor of LAWSON various men of eminence, including "CHARLES SPRAGUE SARGENT, first Director of the Arnold Arboretum, that precious living treasure which the last quarter of the nineteenth century has provided for later centuries; author of the monumental *Silva of North America*. And in the name of this society of scholars, I declare that they are entitled to the rights and privileges pertaining to their several degrees, and that their names are to be forever borne on its roll of honorary members."

SODA AND POTASH.—Experiments made at the New York Agricultural Station show that a deficiency of available potash greatly depressed the growth of the plant even in the presence of an abundant supply of soda salts. A lack of soda in the presence of potash sufficient for the plant's needs seemed to have no deleterious effect whatever upon growth.

ROSA MACRANTHA is supposed by some to be a hybrid between *R. canina* and *R. gallica*, but its real nature is a matter of controversy.

NEW GARDEN PLANTS OF 1900.—Appendix III. of the *Keen Bulletin for 1901* contains a list of the novelties introduced into British gardens during the year 1900. The plant figured in our columns as *Cryptostemma luscianicum* is referred to as *C. calendulaceum*. This list is very serviceable for reference. No authors' names are given, and this omission is, under the circumstances, not to be regretted, as the names given in the horticultural periodicals are the names under which the plants have been shown at various exhibitions, or have been offered in commercial catalogues. In only a few cases have the names been given or verified by competent authority in association with an adequate description. It is a great pity that provisional names intended for garden use only should be written in Latin in imitation of botanical names.

THE EASTER LILY.—The Lily commonly grown as *L. Harrisii* has no right to a specific name, it being merely a variety of the Japanese *L. longiflorum*. According to an article by Professor BAILEY, this variety was introduced from Bermuda to Philadelphia about the year 1875. A woman returning from Bermuda brought two flowering-bulbs to a Philadelphia florist, who recognised their value, propagated them till he had got a stock, which he sold to Mr. W. K. HARRIS, who distributed the plants in 1882 as *Lilium Harrisii*. Had he called it the HARRIS Lily, no mischief would have been done, but the application of a Latin name is incorrect and misleading. How or when this Lily was introduced into Bermuda, we do not know.

FLOWERS IN SEASON.—We have received from Mr. EBENEZER POTTER, Camden Nurseries, Cranbrook, Kent, a considerable number of seedling varieties of Delphinium. They are

numbered but unnamed, and it would serve no useful purpose therefore to refer to particular numbers, suffice it we say that there are single and double varieties, and much variation in colour, including shades of blue, purple, and mauve, white being occasionally united with one of the colours already named. They are good bold spikes, and the flowers are of commendable size.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At a meeting on July 8 of the *Chambre Syndicale des Horticulteurs Belges* and of the *Société Royale d'Agriculture et de Botanique* of Ghent, the following awards were made:—

Certificates of Merit.—For cut flowers of *Iris Kämpferi*, from M. E. BEMINGHUIS (*à l'unanimité*); for *Pteris Wayrini* *hyb. Pteris cretica* - *P. umbrosa*, from M. ARTH. VAN DEN HEEDER; for *Draecena* "Père Charon," from M. L. DRAFS-DOM, of Laeken, Brussels; for a cut flower of *Gardenia Bonfiglioli*, from the last-named exhibitor; for *Gloxinia Mme. Fierens*, from M. E. FIERENS; for a *Gesneriad*, from M. L. DE SMET-DUVAIVIER; for *Conopteris Brazziana*, from the French Congo, from MM. DURIEZ FRÈRES; and for *Hemanthus mirabilis* and *H. fascinator* (*par acclamation*), from M. L. LINDEN.

Certificates for Flowering were awarded for a set of *Hemanthus*, from M. L. LINDEN (*par acclamation*); and for a set of flowering *Gloxinias*, from M. E. FIERENS (*par acclamation et avec félicitations du Jury*).

Honourable Mention for flowering was allotted to a set of flowering *Gloxinias*, from Count J. DE HEMPELIXE; and Honourable Mention for the Variety for *Kentia Forsteriana* var. *pendula*, from M. Ed. PUYSAERT VAN GEERT.

In the second section of the meeting *Certificates of Merit* were accorded for *Laelia grandis tenobrosa*, from M. E. PRAET; for *Cattleya Mendeli* var. *Mme. Edg. Wartel* (*à l'unanimité*); and for *C. Mendeli* var., from M. M. VERDONCK; for *C. Mossie*, and three specimens of *C. Mendeli*; for *Laelio-Cattleya Valvassori* nat. *hyb. C. labiata* Warneri *Laelia purpurata*; for *C. labiata* Warneri, *C. Gaskelliana*, *C. Mossie* var., *C. Mossie* (*à l'unanimité*); and for *C. Mossie* again; all these from the Marquis DE WAVERIN.

A *Botanical Certificate* was awarded to M. M. VERDONCK, for an Orchid imported from Madagascar; and Honourable Mention for Flowering to M. L. DE SMET-DUVAIVIER, for *Cymbidium tigrinum*.

THE CEYLON GOVERNMENT ENTOMOLOGIST.—The Barclay Medal of the Royal Asiatic Society of Bengal has been awarded to Mr. E. E. GREEN, Government Entomologist, Ceylon, in recognition of his work on the insects of Ceylon and India.

YORKSHIRE NATURALISTS' UNION.—The 159th meeting will be held at Wetherby, for the investigation of the Wharfe, from Collingham Bridge to Flint Mill, Stockeld Park, Linton, &c., on Saturday, July 20, 1901 (Monday being found extremely inconvenient, the date is altered). Through return tickets at pleasure party rates will be issued at all stations on the G.C., G.N., H. & B., L. & Y., L. & N.W., Midland, and N.E. Railways, which have booking arrangements for Wetherby, Collingham Bridge, or Thorp Arch, to members and Associates showing their signed card of membership at North-Eastern Stations, or (at other companies' stations) surrendering the certificate noted below. Tickets taken on Friday or Saturday, July 19 or 20, will be available for return any day up to Monday, July 22. Where through bookings are not in operation, members may book to most con-

venient junction, and re-book to destination; the reduced fares being available for each stage of the journey. The railway booking clerks will only grant those reduced fares to members and Associates producing a special certificate signed by the Secretary of the Union (except at stations on the North-Eastern line, where production of card of membership is sufficient). Members and Associates wishing for this certificate must apply to Mr. HAWKESWORTH, Goodman Street, Ilmsley, Leeds, for it at least two days before the date of the excursion, and must enclose a stamped directed envelope and their current card of membership of the Union, which latter will be returned with the certificate. In case of no through booking, members must apply for an additional certificate. Permission is kindly granted by Col. Sir ROBERT GUNTER, Bt., M.P., for his Wetherby estate; Mr. GEORGE FABER, for the Ainsty estate; Mr. ROBERT J. FOSTER, for Stockeld Park; and Mr. T. B. MATTHEWS, for the grounds and woods of Thorp Arch Hall. Permission is granted with the express condition of there being no disturbance of game, nor pulling up roots of ferns or rare plants. The X. E. Ry. Co. have also given permission for the geologists to examine the sections at the Wetherby New Station works, at their own personal risk. A detailed account of this excursion will be published in the *Naturalist* as soon as possible. Mr. F. ARNOLD LEES, Meanwood Lodge, Leeds, who will write it, will be glad to receive, not only the official reports of sections, but any other information, which should reach him within a week.

SOMETHING LIKE A STRAWBERRY!—A fruit weighing half a pound all but three-quarters of an ounce is what the boys call a "whacker," which it is, in more senses than one. Yet we read in the *Daily Mail* of July 2 that a fruit of this weight was gathered by Mr. VERE JONES, of Parkfield, Lowestoft, Norfolk, this season. A fruit of Keen's Seedling, of which we possess a record, weighed 1½ oz., and was 7½ inches in circumference. Query: What would be the size of that half-a-pound fruit?

SCIENCE AND INDUSTRY.—"I am convinced," said Mr. CHAMBERLAIN, at the University of Birmingham the other day, "that unless we overcome the innate conservatism of our people in regard to the application of the highest science to the commonest industries and manufactures in our land, we shall certainly fall very far behind in the race." This is a statement which those who are conversant with what is being done in Germany, and the United States especially, will thoroughly endorse. "A University," says Mr. CHAMBERLAIN, "should be a place where knowledge is taught, tested, increased, and applied." A great deal of the teaching could be done in schools, but the increase should be the special work of the University, and its application that of technical schools and practical establishments.

EMIGRATION.—The circular last issued by the Emigrants' Information Office, 31, Broadway, Westminster, S.W., states that this is the best season of the year for emigration to Canada. There is a good demand for competent farm-labourers in nearly all parts, except British Columbia. There is a good demand for coal and other miners, more especially in British Columbia and Cape Breton, Nova Scotia. There is a fair demand for general labourers, and for certain mechanics, such as carpenters, blacksmiths, and iron and steel workers, but not at St. John, New Brunswick; or at Winnipeg, Manitoba. There is a good demand for female servants everywhere, both on farms and in towns. Owing to

drought and scarcity of employment, emigrants, other than female servants, are not recommended to go to Queensland at present, unless they receive nominated passages, or take a little money with them. Work at the mines and on farms and stations has been seriously injured by want of water. Plentiful rains, however, have recently fallen in parts of the colony, so that prospects may be expected to improve a little. In Western Australia, at Farrabdale, there is a steady demand for sawmill hands and fellers. In many parts of the south-west, as at Toodyay, Perth, Katanning, and Pinjarra, there is a scarcity of farm hands, and of general labourers such as fencers and axemen. There is a good demand for female servants everywhere. In Tasmania the supply of labour is generally speaking equal to the demand. In New Zealand competent general labourers are always able to obtain employment; at Timaru "there is a keen demand for ploughmen and farm hands, who seem very scarce;" and at New Plymouth "boys or men to go milking cannot be got at any price."

OAKBROOK, SHEFFIELD, enjoys the distinction of possessing seven memorial trees planted by Royalty. In 1875, when King EDWARD and Queen ALEXANDRA visited Sheffield as Prince and Princess of WALES, to open a park for the use of the people, the donor of that first park, the late Mr. MARK FIRTH, resided at Oakbrook, and to commemorate the event of their R.H.'s visit to the town and to Mr. MARK FIRTH's residence in particular, four golden-leaved Irish Yews were planted upon the lawn on August 18. The trees planted by the Prince have made much the better use of their time, but this may not be due so much to a more proper method of planting as to the choice of a more suitable position, a circumstance with which probably neither the Prince or Princess had anything to do. Prince LEOPOLD on October 22, 1879, planted two Oaks upon the same lawn, and these are succeeding well, as they should, seeing that they were planted at the most suitable season of the year for such an operation. On August 7, 1879, the Crown Prince of SWEDEN planted a Golden Queen Holly. MARK FIRTH is now only a name for grateful remembrance in the town, and Oakbrook is the residence of Mr. W. S. LAYCOCK, one of Sheffield's foremost industrial men, who naturally places very great value upon the Royal trees that have come into his possession. When we visited the place on a recent occasion there were many signs that Mr. LAYCOCK intends to make Oakbrook as attractive as possible, by developing several features the natural conditions of the place render possible. Then will the present gardener, Mr. P. MASSEY, have a better chance to perfect his Peaches. Though Oakbrook is a considerable distance out of the town, and adjoins the late Sir JOHN BROWN'S residence, Endcliffe Hall, the excellent system of electric tramways, of which Sheffield is justly proud, is just being extended beyond both places.

VITALITY OF SEEDS.—Sir W. T. THURSELTON-DYER and Professor DEWAR have shown us that the vitality of protoplasm is not impaired by the almost inconceivably low temperature of liquid hydrogen. Dr. HENRY DIXON, of Trinity College, Dublin, has recently been experimenting in the opposite direction, and in *Nature* for July II he narrates the results of some experiments that he made with dried seeds, from which he concludes that in every case they can resist surprisingly high temperatures. For instance, in Medicago, 10 per cent. of the seeds germinated after an exposure of one hour to 110° C., and then to another hour to 121° C. The effect

of exposure to high temperature is, however, noticeable by the marked retardation of germination, and by the extremely slow growth afterwards. Seeds that resist, as many do, the action of poisonous vapours owe their immunity, not to the quiescence or power of resistance of the protoplasm, but to the imperviousness of the seed-coat, for if this be punctured before the seeds are exposed to poisonous vapours or liquids, then the pernicious effect of the poisons is rendered evident, as the seeds do not germinate.

ROYAL PURVEYERS.—Mr. CHARLES TURNER of the Royal Nurseries, Slough, has been appointed by royal warrant Nurseryman to His Majesty the KING.

—Her Majesty Queen ALEXANDRA has been graciously pleased to appoint T. JANSOCH, of Dersingham, near Sandringham, Florist to Her Majesty.

—Messrs. WILLIAM WOOD & SON, Ltd., have been appointed by royal warrant horticultural specialists to His Majesty the KING.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At the Bath Rose Show, on July 11, a stall was provided for the sale of spare Roses and other flowers, which were kindly given by the exhibitors and others for the benefit of the Gardeners' Royal Benevolent Institution, in connection with the Bristol and Bath auxiliary branch. The sale and collection realised the sum of £11.

ABIES BRACTEATA.—This beautiful and extraordinary species, by some called *A. venusta*, was supposed to be confined to a limited area in the Santa Lucia Mountains, California. We now learn from Mr. BERT DAVY, that he has discovered five new stations for the tree, by which its northerly range is increased by some 250 miles. This tree is somewhat spring tender in this country, but we owe to the courtesy of Mr. COLEMAN some fruiting specimens from Eastnor Castle, Herefordshire, one of which was figured in our columns in 1889, vol. v., p. 211.

FRUIT PROSPECTS IN SPAIN.—We are informed that the prospects of the Orange crop in Spain are of the "record" order; also that the Grape yield is expected to be a large one.

ROOTING OF LILIUM GIGANTEUM.—Mr. MALLETT writes us:—"I am sending you an interesting root of *Lilium giganteum* (fig. 21, p. 61), showing that this Lily is stem-rooting to a marked extent, and illustrating how the enormous stems support themselves when the bulb has gone. You will notice the basal roots which supported the plant before it flowered, some of which have perished with the bulb, and that those proceeding from the flowering stem have pierced the bulb scales in all directions, and destroyed them. A few offsets will be noticed around the basal disc, which will survive the old bulb, and live on its dead tissues for a year or two. I have never seen a more thorough annihilation of a bulb by its own flowering axis in any plant I have examined hitherto; not only has the stem exhausted the bulb, it is also feeding on its dead tissues. I have removed a number of the old scales because they were quite rotten, and unfit for the post."

PUBLICATIONS RECEIVED.—*Journal of the Board of Agriculture* (Messrs. Loughton & Co., 1, Essex Street, Strand), June. Contents: Gooseberry Mildew, Handling of British Wool for Market, by J. W. Turner; Canker Fungus, Feeding Experiments with Sheep, Insecticides, Manuring Swedes and Potatoes, Pasteurisation of Milk and Cream, Cold Storage and Transport in Canada, Agricultural and Miscellaneous Notes, &c.—*West Indian Bulletin*. Contents: Agricultural Conference, 1901 (continued).

Legislation to Control Bush Fires, by H. A. A. Nicholls; Treatment of Soils in Orchard Cultivation in the Tropics, by the Hon. Francis Watts; Rubber-planting in the West Indies, by J. H. Hart; Pine-apple Cultivation in Antigua, by the Hon. Francis Watts; Marine Resources of the British West Indies, by T. E. Duerden; Cultivation of Onions at Antigua, by W. N. Sands; and Artificial Drying of Cacao, by G. W. Smith.

HOME CORRESPONDENCE.

PEA EXONIAN.—I was pleased to see A. H.'s remarks on this fine Pea, p. 35. I have grown it every year since it was sent out by R. Veitch & Sons, of Exeter. It does well in the west, and has this season been good at Droppore. As the haulm is not very robust, I had it best to sow the seed about the end of the month of March. Those who have not as yet grown Exonian, would do well to try it next season. C. Page, *Droppore Gardens, Maidenhead.*

GREENHOUSE HEATING.—Mr. Alfred Chandler (p. 12), while being of opinion that petrolumised in a small boiler would answer where "there was not a large house or a number of houses to be heated, fears that it would be useless to nurserymen and others, who have coke furnaces heating some thousands of feet of 4-inch hot-water pipes." In reply, they seem to say that it was the "coke furnaces heating thousands of feet of 4-inch pipes," which I had in my mind's eye at the time I penned my note on the above-mentioned subject. Taking it as a fact that a cycloid of given dimensions filled with petroleum, and placed inside a small boiler, will effectually heat the water contained therein, together with that in a given number of feet of 4-inch hot-water pipes attached. Thereto, the question of heating by the same means the water in a coke furnace, say a horizontal tubular boiler, 9 feet 6 inches long, with from 2,000 to 1,000 feet of 4-inch hot-water pipes connected therewith, simply resolves itself into a sum of "simple proportion"; the heating capacity of a petroleum stove or cylinder being governed by size and the number of burners provided therein. For my own part, I do not see any difficulty likely to arise in the way of heating glasshouses by means of petroleum employed as described by me in the *Gardeners' Chronicle* for June 15 last, p. 391. It would be interesting to hear what mechanical engineers may have to say on the subject. In future, petroleum will probably be more generally used to supply the motive power than is thought of now. At present cars and carriages on both pleasure and business bent are driven by it, as also are the Great Eastern Railway Company's express trains from Harwich to Liverpool Street, and *vice versa*. In conclusion, I beg to thank Mr. Chandler for the remarks with which he concludes his note *re* patent rights, which however I was not altogether unmindful of when I penned the words "I reserve to myself all rights." &c. H. W. Ward, *Linc House, Rayleigh, July 6, 1901.*

LILY POND AT BERKSWELL, COVENTRY.—Having given an account in the *Gardeners' Chronicle* of September 1, 1900, p. 172, of the first year's flowering of my Lilies, I now give the result of their second year's flowering, and I am pleased to say they have grown and flowered quite to my own and to everyone else's satisfaction who have so far had the pleasure of seeing them, which is proof sufficient that they enjoy and delight in the silty porous clay in which they were planted, the leaves of some of the stronger-growing plants occupying a space in the pond of fully 5 feet in diameter, so that the native aquatic which spontaneously grow up in the pond are now, I hope, in a fair way of being overgrown and eventually altogether expelled. *Nymphaea Gladstoni*, which did not flower last year, has amply made up for this year, by sending up magnificent white blooms four and five at

a time, larger flowers, and of apparently with more substance in the petals than those of *N. albida*, although the latter runs it close in its habit of free-flowering. *N. odorata exquisita*, which did not flower last year, is still a weak plant, and flowers sparingly, sending up not more than two flowers at a time. The flowers are of good size, neat, and of a slightly pinkish-

Some of the plants send their blooms well up above the water-level, whilst others seem to prefer to rest upon it; but of this I am not prepared to give any decided opinion, as my pond, notwithstanding much puddling, has a leak somewhere, and the plants are in rather low-water sometimes. When planting, one of the mounds happened to be made a little higher

average day's list of their flowering:—*N. albida*, two plants, eight flowers; *N. rosea*, one plant, five flowers; *N. Gladstonei*, two flowers; *N. Dr. Paunce's Seedling*, two flowers; *N. Robinsoni*, three flowers; *N. Marliacea ignea*, two flowers; *N. chromatella*, four flowers; *N. Laydekeri liliacea*, two flowers; *N. flammea*, two flowers; *N. sulphurea*, two

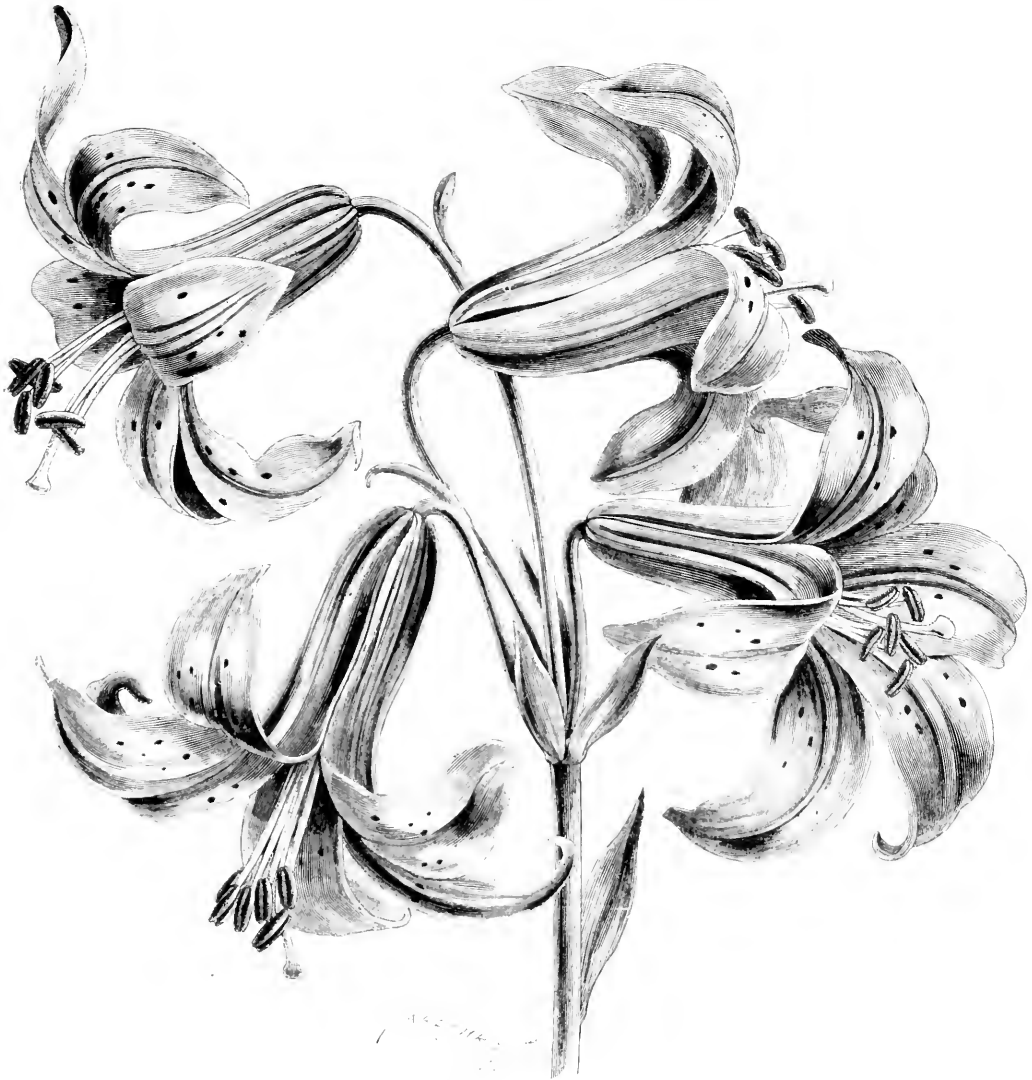


FIG. 19.—LILIUM PARRISI; FLOWERS YELLOW. (SEE P. 18.)

white, but not of a very fascinating colour; its name implies perfume, but of this I discover very little. Dr. Paunce's seedling is a very strong-growing plant, having dark green leaves,* and sends up fine bold flowers of a pinkish tint, which stand well out of the water. This *Nymphaea* is a favourite in my pond, although it does not appear to send up its flowers so freely as *N. albida* or *N. rosea*.

* It is the *Gladstonei* whose leaves are tinted with brown.

than the others, on this a plant of *N. chromatella* was placed; when the water happened to get low, its crown was almost above water. To ensure its safety, I took a strong crooked fork having a long handle to it; this implement was fixed well under the plant, which was dragged with sundry strong pulls into deeper water. The roots had strong hold, and many were broken, but the plant, after a short season of sulking, is now growing and flowering freely. Subjoined is about an

flowers; *N. exquisita odorata*, one flower. These flowers are always at their best during the hottest part of the day. W. Miller, *Borksweil*, July 11.

TWO LONDON DINNER-TABLE DECORATIONS.

Having been enabled recently to inspect two table decorations carried out by Mr. Bacon, gr. to W. W. Astor, Esq., Cliveden, at his town house, at Carlton House Terrace, a few notes thereon may be acceptable to some

of the readers of this journal. The tables were laid for about fifty persons, and were consequently of considerable length, and required a large quantity of material. In these decorations Mr. Bacon uses, as far as is possible, one flower, and these of one colour, those at the time of my visits being Malmaison Carnations on the first occasion, and on the second Crimson Rambler Roses. For the purpose of effectively decorating the table on these occasions, Mr. Bacon has made a series of wire shapes of various designs, and these are very lightly dressed with greenery, and the selected flower. Some of these shapes represent baskets when dressed, others epergnes, hoops with three feet on which to stand, &c. They are fitted with very small egg-cup-shaped receptacles at convenient points, and these are filled with damp clay, into which the flowers when wired are stuck. Smilax is used to cover the framework of the shapes, and it is kept in position by a few ties here and there. Much of this work, and the wiring of the flowers, is carried out on the previous day, and the flowers preserved fresh in water. The Malmaison (pink) Carnation formed a pleasing and effective display, over a thousand blooms being used, including a couple of shapes dressed with the variety Miss Jolliffe. Fifteen of these shapes were used, besides some low glass vases on either side the whole length of table, and a few well-grown *Draecenas* stood between the shapes in the centre. Besides the trails of Smilax, the shapes are also lightly dressed with sprays of Asparagus Sprengeri, and the flowers thinly introduced afterwards. Beautiful as the Malmaison Carnations were, for effect they were far behind the Crimson Rambler, the colour of which when lit up by electric-lamps was vivid and effective. Besides the Rose foliage, spikes of *Eulalia japonica variegata* were tastefully introduced. These shapes are of Mr. Bacon's designing, and are very useful where lightness in the work and an unobstructed view across the table are sought for. *Rambler*.

STRAWBERRY VEITCH'S PERFECTION.—Having grown this Strawberry for three seasons in different aspects in the gardens here, I have formed a very high opinion of it. Strange to say, the first plants I had of it did not prove a success. In July, 1899, I had a number of runners layered into 4-inch pots, and from these plants, which were planted in the end of August of that year, we had last year one of the finest crops of dessert fruit we have had for years. I had runners taken from these plants in 1900, and planted in August, which have produced a magnificent crop of fine fruits this season, and are now, July 1, a sight worth seeing. I consider it a grand Strawberry for a second early, or mid-season variety; the fruit being large, handsome, produced in quantity, and the flavour is excellent. I learn from my note-book that plants were planted on August 17. The plants which were planted in August, 1899, are producing a very heavy crop of fine fruits, which shows that it is a Strawberry that will crop heavily when either one or two years old. I may here state that after many years' experience in different soils and districts, I consider it a mistake to destroy the plants after one year's fruiting. The young plants produce fine fruit the first season after planting, but the quantity bears no comparison to that produced the second year; and I assert that in deeply cultivated, heavily manured land most varieties of Strawberries may be retained with advantage for three years. On thin, light soils the case is different; but then the Strawberry being so much esteemed as a fruit for dessert and other uses that it is well worth extra attention, and where thin soils have to be dealt with, I know of nothing better than a thick coating of good farmyard-mannure well incorporated with the soil during the winter previous to planting for getting such soils into a condition to grow Strawberries upon them. My practice is to plant a bed annually, and to destroy one annually, so that we have always abundance of fine fruit to meet all requirements. I have observed during recent very

trying summers that autumn mulching is very much preferable to mulching in the spring, especially on light soils such as we have here resting on gravel. *David Kemp, Stoke Park Gardens, Slough.*

STRAWBERRIES AT LAMPPOST.—This year has been the best season for many years for Strawberries in this district, and the soil at Lampost being a retentive loam, the plants withstand drought well. Fruit-picking was begun on Sunday, July 9, the variety being Laxton's No. 1. The fruit of this variety is not so good looking as some others, Royal Sovereign, besides being one of the first to ripen, is a great acquisition. The variety Laxton's No. 1 fruited on young plants on a warm border, and side by side with Royal Sovereign, the latter being also young plants, layered in pots last year, and planted as soon as ready. This is the second year that I have grown Laxton's No. 1, and it is the earliest I have, but is of very little use the second year, and it is not advisable to grow a large quantity of it. One thing in its favour, however, is that it is good for preserving, for the colour and quality of the preserve cannot be excelled. The next variety to fruit was Royal Sovereign, on young plants as above mentioned; the fruits from those plants were of large, good shape, and fine flavour, but for preserving, it is inferior. I have several lines running across the garden of varieties of two-year-old plants, Royal Sovereign amongst them, which have borne a very heavy crop of fruit; also Laxton's Monarch, which has this year proved to be a superior fruit, having size, weight, flavour, and firmness. I am much pleased with Monarch this year, and intend to give Royal Sovereign and Monarch a fair trial in order to see which is the better variety. Sir Joseph Paxton is later than either, and I have just started picking the fruit, and I may just mention to relate about it shortly. The varieties Mentmore and Leader have heavy crops; Loxford Hall Seedling and Latest-of-All are just ripening. *H. Kempshall, Lampost, July 10.*

LILIU M GIGANTEUM.—Growing in a deep peaty bed, amongst Rhododendrons, Azaleas, and Kalmias, in the Royal Park at Greenwich, may just now be seen in all its glory an unusually large and well-developed specimen of the king of Lilies. It is fully 9 feet high, bears twenty-one flowers, and has a stem circumference of fully 11 inches. Rarely in these Isles has a larger specimen of this Himalayan Lily been recorded. The situation is certainly peculiarly suited for the growth of this plant, it being low-lying and protected on all sides by full-grown trees. *A. D. W.*

LILIU M CANDIDUM.—No doubt the fungoid disease which attacks this popular Lily will be much discussed during the Lily Conference of the present week. [See Mr. Masse's paper, p. 63, *Et.*] I have had just recently in diverse parts of Surrey ample evidence that the disease has not by any means exterminated this Lily. One of the finest clumps seen in one cottage garden, on the leafage of which there was not a trace of fungus, had fifteen strong stems in full bloom, and the bulbs were so crowded, that the central ones were forced quite out from the soil, and were fully exposed. It is commonly assumed that such exposure of the bulbs checks the progress of the fungus. But then I found in many other gardens this Lily in luxuriant leafage and bloom, the bulbs of which were quite buried. For that reason, it does not do to construct an hypothesis in relation to the fungus from two or three cases only. It seems odd that whilst in literally myriads of gardens white Lilies should thrive so well without any treatment of a remedial kind being applied, in others no remedy, however strongly recommended, seems to be effectual in combating the fungus. We may say almost the same thing with reference to the Hollyhock, as now and then in cottage gardens quite a charming show is made. But Lilies should be much more amenable, when in the resting stage, to remedial treatment than are Hollyhocks. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 2.—*Present.*—Dr. M. T. Masters, F.R.S., in the Chair; Messrs. Odell, Chapman, Saunders, Holmes, Bowles, Drury, and Worsdell, Drs. Müller, Cooke, and Rendle; Prof. Boulger, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Orchids, Malformed.—Dr. MASTERS reported on the flowers sent to the last meeting. He found the Cattleya to be dimorphic, and the odontoglossum to have five perfect stamens, the other parts being variously twisted and deformed.

Harthouge, abnormal form.—Mr. DRYEY exhibited a plant with the fronds variously modified, being sub-lanceolate, emarginate, sub-pinnate in places, and much crested. It was a seedling of doubtful origin; but a similar plant had been found wild many years ago.

Aristobolchia trilobata.—Mr. ODELL showed flowering shoots of this species, remarkable for the form of the flower, in that the calyx closely resembled a pitcher of Nepenthes, having a lid provided with three long, pendulous streamers.

Christinus alpinus, pods proliferous.—He also showed specimens of this, not uncommon monstrosity in certain *Christine*. The pods were swollen at one place, within which was a double flower having several crumpled yellow petals and abortive stamens in the place of an ovule.

Silene and Anthyllis.—Mr. HOLMES found that the specimens sent to the last meeting proved to be *S. hirsuta*, and a variety of *A. vulneraria*.

Campanula, fasciated.—Mr. HOLMES exhibited a large terminal flower of the common Canterbury Bell. It consisted of a "multifid" flower of numerous parts; also a flower of Paris quadrifolia, with six leaves to the whorl, but having the usual 4-merous perianth.

Plymouth Strawberry.—Mr. HOLMES also brought specimens of the "Plymouth Strawberry," which he has had growing for ten years. It is remarkable for having a foliaceous flower, the petals and stamens being represented by numerous small leaves, as in the Green Rose and Alpine Strawberry; while each carpel on the receptacle consists of a three-pointed leaf, or rather petiole, rolled up upon itself. There is no trace of an ovule within it.

Beech with pubescent-veined leaves.—He also showed specimens of this peculiarity, apparently due to some insect attack. Mr. SAUNDERS undertook to examine it.

Proliferous Causes of Cryptomeria.—Mr. WORSDELL brought specimens of this monstrosity; which Dr. MASTERS observed was not an uncommon production in that tree.

Lily funguses.—Dr. RENDLE showed stems badly attacked by a fungus. Dr. M. C. COOKE reports as follows upon it:—

"It may be reasonably assumed that the Lilies exhibited were suffering from the attack of the "Lily disease," so called by Marshall Ward in his memoir (in the *Annals of Botany*, vol. ii., p. 39, pl. xxii. to xxiv., 1899). This is stated to be due to a white mould, of the genus Botrytis. Most of the specics being only a conidial stage of a trumpet-shaped fleshy fungus called a Peziza in past times, but now dignified by the name of Sclerotinia, because the cups are developed from a hard sclerotium, which is the hibernating mycelium of the mould. In the present instance I am not aware that the sclerotium has been observed, and certainly not the Peziza; hence it would be rather premature to give the supposed Peziza a name, before its existence has been demonstrated. Moreover, Marshall Ward has not given a specific name to his Botrytis, although he has described it with its clusters of egg-shaped conidia. Berkeley described, in 1851, a species of white mould, growing upon Lilies, which he called *Ovalaria elliptica* from its elliptical conidia (*Gardener's Chronicle*, Sept. 10, 1851, fig. 66). This nevertheless is a species of Botrytis, since called Botrytis elliptica, and probably is Marshall Ward's species. Long previous to the above, Corall figured and described a white mould, with ovate conidia, in glomerules, which was found growing on immature fruits of Lilies, in Bohemia; afterwards cited in other parts of Europe. This mould he called *Polyactis cana*, but during the recent revision of all species of fungi, by Saccardo, it has been called Botrytis canescens. Whether it is different from Botrytis elliptica I cannot say. Another species of Botrytis has been found in Britain and Holland, on leaves, stems, and flowers of cultivated Tulips. It is

called *Botrytis parasitica* *Cavara* *App. Bot. Ven.*, 10, tab. vi., figs. 1 to 4. This is probably different from the *Botrytis* on Lilies, although it is not improbable that it might develop upon Lilies if it came in contact with them. Having in view the conference which is shortly to take place, it may be interesting to allude to all the fungoid diseases of Lilies which have come under my notice; and, in this connection, it is satisfactory to learn that the number of pests is below the average of plants so largely cultivated. No other parasitic mould has been recorded, and only recently, one species of *Mucor* which attacks Lily bulbs raised in Japan for exportation to Europe. This species is *Rhizopus means*, described by Yassoe (*Kio Bulletin*, 1897, p. 57,

To these must be added the brands with two-celled teleutospores, although I am not aware that *Puccinia lilacearum*, notwithstanding its name, has been found to attack Lilies, although it is known in Britain on *Gagea* and *Ornithogalum*. Two other species, *Puccinia Tulipæ* and *Puccinia lilaceosa*, attack Tulips, so that, on the whole, the Lilies are favoured by almost immunity from these forms of fungoid pests.

The last group or section of parasites to which I need allude are the leaf-spots caused by incomplete fungi, called the *Spheropteridæ*. Here, again, the British cultivator may congratulate himself, since *Phyllosticta bilirica*, on the leaves of *Lilium candidum*, has not extended beyond Italy, and *Phyllosticta lili*, on *Lilium*

Hybrid Pisson Flower.—Dr. J. H. Wilson, St. Andrews, sent specimens of a hybrid between *P. alba* and *P. Constance Elliott*.

Taberna.—*Diseased*. Some specimens were received from Mr. C. MAYERS, Hockley, Essex, upon which Dr. Cooke reports as follows: "In the decayed crown of the corn I find no mycelium, or evidence that the decay was caused in the first instance by fungi, but plenty of insects were present." Dr. MAYERS has observed that such decay was usually at the base, not at the apex, of the corn, as in the pre-cut instance.

Catantopus Disease.—Mr. G. Rinkens, of Exton Park, sent some plants which were in a failing condition. Dr. COOKE examined them, and reports as follows: "The Carnations evidently suffered in the first instance from worms at the roots, afterwards, when the foliage was fading, they became attacked by the Carnation mould (*Heterosporium catantopum*) figured in *Gard. Chron.*, August 21, 1886, fig. 500. It is doubtful whether these particular black moulds will attack healthy and vigorous plants; but when they are weak, sickly, or injured, they then become a ready prey."

Apple-stems attacked by Caterpillars.—Specimens were sent by Mr. W. CAMM, of the Abbey gardens, Bath, Sussex, upon which Mr. SAUNDERS reports as follows:

"The Apple stems from Mr. Camm are, I should say, undoubtedly bored by the caterpillars of the 'Wood Leopard Moth' (*Zenozera aspidi*). The entrance to the gallery may be easily found by examining the tree, and it moisture is seen to be exuding from any part mixed with sawdust like particles of wood, there the hole will be found, a sharp pointed wire should then be passed in as far as possible, so as to stab the caterpillar. If this cannot be accomplished, the entrance should be somewhat enlarged, and some tow or cotton wool steeped in tar or paraffin oil should be pushed in as far as possible so as to stifle the insect. When no more can be got in, the entrance should be closed tightly with well kneaded clay or wax. If a large grey and white moth with delicately spotted wings is found on the trees, it should be killed, as it is probably the parent insect."

Palms flowered.—Mr. A. Doto, 36, Albyn Road, Dulwich, sent a portion of the male inflorescence of *Chamærops Fortunei*. The plant is described as being some 4 feet high to the top of the crown. Another plant has flowered at Christchurch this season, and a third elsewhere. Lastly, a fourth has flowered after an interval of twenty-seven years. This summer has therefore appeared to be particularly favourable to the flowering of Palms in the open.

Plants from I. de Minor.—Miss WILMOT sent specimens of a white-flowered Larkspur, and a golden yellow Centaurea, both of which appear to be new to science, and at present unnamed.

Lucubræ, nitida.—Plants were received from Mr. A. H. SMYTH which failed to produce their flower spikes. The stems were remarkable for the large size, and flat form of the leaves, the leaves on the lower part being small and with serrated margins. This feature appeared to show that the plants had grown in too moist a locality, the vegetative growth being abnormally stimulated, and so possibly a frost had arrested the flower spikes.

COMMITTEES AT CHISWICK

JULY 16, 17. On Tuesday last the Royal Horticultural Society's Committee, met in the big vinery at Chiswick gardens, and a Conference on Lilies was held in a tent on the lawn. H. J. Elwes, Esq., F.R.S., in the Chair, at which a number of papers were read by Dr. Henry, the great "Chinese traveller," Mr. J. G. Baker, Mr. Yeld, and other gentlemen. The company was for the season disappointingly scanty, and the display of Lilies smaller than had been hoped for, the best and fullest collections coming from Messrs. WATSON & CO., Colchester, and Messrs. J. VEITCH & SONS, Chelsea. Other floral items of most interest were Sweet Peas, and numerous hardy herbaceous perennials in their variety. Orchids were few, and fruit was not abundant.

Orchid Committee.

JULY 16, 17. *Present*.—Harry J. Veitch, Esq., in the Chair, and Messrs. JAS. O'BRIEN (Hon. Sec.), H. T. PILL, Dr. B. Crawshaw, W. B. Young, A. Haslop, L. Hill, W. Thompson, H. J. Chapman, and T. W. Bond.

Messrs. HUGH LOW & CO., Birch Hill Park, showed a small group in which were *Lælia* × *Bombacina* × *Devania*, with rather small flowers, in form like *L. tenebrosa*, in colour bright rose-purple with maroon tinge to the lip, *Cypripedium* × *Lawrenceana* Charlesworthii, having a strong resemblance to *C. Charlesworthii* in form, but with rose-purple lines and tinge



FIG. 20.—LILIAM WASHINGTONIANUM VAR. PURPUREUM. (SEE P. 48.)

with plate), and attacks the bulbs which soon become rotten, and exhibit clusters of tiny filaments with black heads, like miniature pans. These heads enclose minute conidia, whilst resting spores or zygospores are produced within the tissues of the decayed bulbs, and thus perpetuate the species after a period of rest. The section of fungoid parasites which include the smuts, rusts, and brands is represented, although there is no such such as smuts, Erythronium or Ornithogalum. The cluster cups of the Lily of the Valley (*Lilium convallaria*), has occurred on *Lilium condensæ*, and another cluster cup (*Eskidium*) occurs on *Martagon* Lilies in Siberia. Of the brands with simple teleutospores consisting of a single cell, the most common is *Eromyces Erythronii* on *Lilium candidum*, in Europe; and another, less common, probably unknown in Europe, is *Eromyces lili*, described as a pest of Lilies in the United States.

superbum, is at present confined to Canada. There is an allied parasite, with some technical differences, called *Cylindrosporium meconopium*, found on leaves of the *Martagon* Lily, but at present confined to Switzerland. Altogether, this report should give courage to the English cultivator of Lilies, inasmuch as the "Lily disease" so called, associated with *Botrytis*, is the only one which need cause anxiety."

Mr. WILKS observed that the best remedy was to place the diseased Lily bulbs in a bag of sulphur in some hot place in a greenhouse, then to replace them in the ground, but not too deeply.

A unanimous vote of thanks was given to Dr. Cooke for his report on the fungus sent to the last meeting, as well as on the present occasion.

Lily Hybrids. Mr. BOWLES exhibited blossoms of *L. Dahlmanni*, the result of *L. dalmaticum* × *Hansonii*, to show the difference in colouring.

in the upper sepal. C. x Frau Ida Brandt (to grande x Youngiana, C. x Goweri magnificum Schofield's variety, a very large and finely coloured form, C. x Kinsballiana, Low's variety, and two fine varieties of Cattleya Gaskelliana)

REGINALD YOUNG, Esq., Linnet Lane, Sefton Park, Liverpool (gr. Mr. Poynter, sent Cypripedium Tautziaum Youngii (barbatum grandiflorum x niveum), differing from the original in being larger and more uniformly purple tinted)

SIR FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young, showed flowers of the natural hybrid Cattleya x Whitei (Schellieriana x labiata), Flowers large, bright, dark rose-coloured, with purplish-rose front to the lip)

E. ROBERTS, Esq., Park Lodge, Eltham (gr. Mr. Carr), showed a finely grown plant of Anguloa Ruckeri, with six flowers of excellent quality; yellow uniformly spotted with pale red-brown

Awards.

FIRST CLASS CERTIFICATE.

Ochthoglossum varicatum Thompsonianum, from W. THOMPSON, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens). A remarkable and gigantic form of this pretty Mexican species. The inflorescence was very stout, over 20 inches in length, and bearing eight large and finely-formed flowers, far superior at all points to any previously seen. Flowers 3 inches wide across the petals, and $\frac{3}{4}$ diagonally across the sepals; petals $1\frac{1}{2}$ inch wide; lip $1\frac{1}{2}$ inch wide; sepals salmon-brown, margined with yellow; petals and lip pale yellow, blotched with brown.

AWARD OF MERIT

Ochthoglossum x Crossoglossum, from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables).—A very fine and distinct hybrid, well intermediate between the parents. The cross was made July 7, 1891, O. Hallii being the seed-bearer, the other parent O. Harryanum, and the plant flowered July 12 this year. The form of the flower is nearest to O. Harryanum, but the colouring and spiny erect and apiculate wings to the column are strongly indicative of O. Hallii. The ground colour of the sepals and petals is of the palest greenish-yellow, with a nearly white area at the bases. The sepals are very heavily blotched with chocolate-brown, and the petals similarly but less profusely marked. Lip large and concave at the base, as in O. Harryanum, and with a bristly erect dotted with brown. The basal half is cream-white, spotted with purplish-brown; the front unspotted, lined inward at the sides, and apiculate.

Cypripedium x Kinsballiana, Low's var., from Messrs. Hiron Low & Co. The plant was illustrated but not described in the *Gardener's Chronicle*, June 29, 1896, p. 891. It is a garden-raised specimen, raised between C. Rothschildianum and C. Dayanaum. That shown by Messrs. Low was an imported natural hybrid. The present variety is the largest and best, and the most nearly approaching C. Rothschildianum in form and colour. Upper and lower sepals large, cream-white, heavily striped with purple-brown; petals long and extended, whitish, spotted with purple-brown; lip tinged with reddish brown.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. R. Wilson Kerr, W. J. James, R. Dean, S. A. de Graat, E. H. Jenkins, W. P. Thomson, W. Bain, J. Jennings, C. R. Fielder, Chas. E. Pearson, C. Dixon, C. E. Shea, Chas. T. Druecy, Geo. Paul, H. Turner, R. C. Notcutt, O. Thomas, Jas. Walker, George Gordon, J. Fraser, and J. F. McLeod.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed extensively Lilies in variety (fifty-seven species and varieties) admirably grown, and many growing in pots, and others were set stems merely. The groups sent in circle in form, was placed at the head of the central mass of exhibits. The *pièces de résistance* consisted of L. Browni len-antium, L. auratum var. Witter, a delicately coloured variety, white, with a yellow band on each petal, L. auratum, with evenly distributed purple spots, and the usual yellow band; L. rubro-vittatum, of which there were several examples, the central band on the petals being of a reddish-purple tint, and half an inch in width, and the spotting as in the type; L. Browni was shown as a cut flower, massive looking blooms, white on the inside and dull purple outside; L. superbum, an orange and yellow coloured flower, with purple spotting, and a Turk's cap as regards form. Some of the flowers of this species shown presented brighter tints than others. L. Thunbergiana var. Orange Queen, an exactly posed flower, 6 inches in

width and orange coloured, with a few diffused spots over the surface; L. T. var. atro-purpurea, a flower of a dull crimson tint, having narrow petals; and a flower not more than 4 inches in diameter; L. T. bicolor, with a flower of orange scarlet colour; L. T. E. L. Joerg, similar, but the petals tipped with crimson; L. Humboldtii, an orange-coloured Turk's cap, and set off by bold spotting; a plant very free to flower; L. Grayii, a small drooping flower of orange-scarlet, which does not open widely; L. concolor, brilliant scarlet; and L. c. var. luteum, a plant of small growth, flowers erect, both apparently delicate, but really of easy cultivation; L. parvulum var. californica, a very brilliant scarlet and orange-coloured "Turk's Cap," with petals which completely reflex; L. longiflorum foliis albomarginalis, the leaf variegation being in the form of longitudinal lines of a creamy white; L. L. giganteum, with much larger flowers, of purest white. Of the handsome L. excelsum (testaceum), several well-bloomed plants, and also cut stems loaded with flowers, were shown. The colour is that of a pleasing shade, and it is a plant of easy culture in most soils and situations; L. Hansonii, an orange-coloured, and odoriferous flower, which in the present season is about a month too late; L. croceum, so-called; L. ligurium splendens, an orange-scarlet flower; L. candidum, the painter's Lily, a plant which in some soils succeeds like a weed, and in others will not grow for any length of time; L. chalcidonicum maculatum, L. speciosum album, and L. rubrum, both well known species for market-garden work and in pots and borders; L. Henryi, a magnificent, tall-growing species, with large flowers, 5 inches in diameter, lightly disposed on long petioles; the stems of the plants exhibited were 7 to 8 feet in total height. The Colchester firm showed likewise the lovely *Mariposa Lilies* (*Glaucidium*) in variety, *Hemerocallis luteola*, a late-blooming species, of a pure yellow tint (Gold Medal).

Messrs. J. YETCH & SONS, Ltd., Royal Exotic Nurseries, Chelsea, staged in formal manner cut blooms of a large number of species of Liliaceae. The back line consisted of L. longiflorum, the next toward the front, L. Hansonii, L. excelsum, L. Purple Maritagon, L. excelsum in duplicate examples; the third row L. elegans sanguinea, L. mabeliana fulgidum, which differs from the type in its more fervid tint; L. elegans fulgens, L. croceum, L. candidum, L. Browni, and L. umbellatum var. imperatoriae. Other species, some scarce, were L. Washingtonianum, white, faintly spotted; L. superbum, L. canadense flavum, with small flowers of an orange tint, having recurving tips to the petals; L. concolor, L. croceum, L. chalcidonicum Heidehrii, a brilliant crimson "Turk's cap"; L. canadense rubrum, L. dilatatum, with deep purple flowers, covered with densely set bars; L. venustum macranthum, L. canadense flavum, &c. — A most interesting because comprehensive collection (Silver-gilt Flora Medal).

Messrs. YETCH & SONS showed *Buddleia varietalis*, a plant having long racemes of pale blue flowers of a small size, but showy withal.

Mr. HENRY JONES showed a few nice blooms of *Lilium Browni*, *L. parvulum*, L. elegans, and others, merely describing them as having been grown outdoors in Surrey.

Capt. REID, Yalding, Kent, showed *Lilium Browni*, L. *Segovitzianum*, observed in no other collection at the meeting; L. x Burbanki, and L. candidum.

SIR TREVOR LAWRENCE, Bart., Burford, Dorset, showed *L. Parryi*, a seedling from L. Martagon album (see fig. 16), Burbanki (Award of Merit), and L. Humboldtii *Blumenavianum* magnifica, an orange-coloured "Turk's Cap," with crimson spotting over the entire surface of the petals.

G. S. PATEY, Esq., Newton Abbot, showed *Lilium chalcidonicum*, common Martagon, and Martagon album; L. candidum, L. dilatatum, L. croceum, L. Burbanki x L. excelsum, and L. candidum var. floristratum, a white flower mainly, with blue-coloured stripes towards the tips of the petals.

Messrs. BAIRD & SONS, 12 and 13, King Street, Covent Garden, London, showed well a number of hardy perennial plants as cut flowers, including excellent Phloxes, Water Lilies, Dolphiniums, and Penstemons. Their Lilies included several of the more common species, besides L. canadense rubrum, L. parvulum Michauxii, L. p. pavillorum, and L. Browni (Banksian Medal).

Mr. JOHN RUSSELL, Richmond Nurseries, Richmond, set up a group of foliage plants, including *Caladium Russellii*, a big-leaved variety, pale pink, mottled ground, green veins; C. Gauremii, C. Sir Julian Goldsmith, C. Oppheii, C. Exquilita, &c.; *Aloucaia* (Sander-

ana, A. gandavensis, A. aryzana, and A. montifontanensis, very striking; and numerous Crotons. Altogether a very showy group (Flora Medal).

Messrs. THOS. WADE, Ltd., Hale Farm Nurseries, Feltham, exhibited a mixed group of plants and cut flowers of hardy herbaceous perennials, including a few species of Lilies, such as L. parvulum, L. Humboldtii, L. Browni, L. chalcidonicum, L. odorum, L. longiflorum, and L. Henryi. The group was rich in shrubby Phloxes, Iris Kempferi, Gaillardias, Campanulas, Aktenverias, Delphiniums, Camas, Chrysanthemums, succulents in variety, Water Lilies, Statice. Special mention may be made of *Campanula mirabilis*, with a drooping habit of growth, and palest of blue flowers (figured in the *Gardener's Chronicle*, 1898, vol. xxiv., p. 23); *Ornithogalum luteum*, leafless plants, having spikes of pure white blossoms ins. in length, on slender stalks 2 feet high; *Ajuga reptans*, with crumpled moss-green foliage, as large as a florum, the habit of growth dense and lowly; *Lithrum roseum superbum*, *Chrysanthemum W. Henshaw*, a flower having white rays and a yellow disc; *Acanthus longifolius*, *Semper-vivum Dufouieri*, having yellow flowers; *Ericeron glaucus*, pale violet rays and yellow disc; *Penstemon heterophyllus*, with bright blue-coloured flowers; *Delphinium chinense*, deep blue flowers; and D. album; *Stellaria media* rosea, *Heuchera Zabolina*, pale pink (Banksian Medal).

W. PROWSE & SONS, Sutton Court Nursery, Chiswick, exhibited an extensive collection of Japanese Maples as examples, rising in height $1\frac{1}{2}$ feet to 6 feet. This group was enhanced by the insertion of Lilies in bloom in variety. *Aver sanguineum* is a remarkably dark coloured variety, new to us, the prevailing tint a chart purple and rosy-red, making it an effective plant. It is, so far as we know, quite the darkest of the ornamental-leaved section of Japanese Maples (Banksian Medal).

Messrs. J. YETCH & SONS, LTD., showed small plants in 8's. of *Nerium roseo-pinnatifidum*, flowers rather larger than is usually the case with *Nerium Oleander*. They likewise had a good exhibit in a shady nook on the lawn, of a number of *Nymphæas* in pans filled with water, the plants being in most cases well in flower. The species consisted of *N. fulva*, *N. Marliacea alba*, *N. M. chromatella*, *sanguinea*, *ignea*, *carnea*, and *flammea*. *N. seignouretii*, *N. Aurora*, *N. pygmaea helveta*, *N. Robinsonii*, *N. Ellisiana*, *N. tuberosa*, *N. Laydenkeri fulgens*, *N. L. purpurata*, *N. L. lilacea* (Silver-gilt Flora Medal).

Mr. ED. LADBLOW, of the Roker Nursery, Sunderland, showed a white sport from *Pelargonium Madame Thibaut*, used by an late bloomer.

PERRY WAKEBER, Esq., Fawkham, Kent, made an excellent display of Sweet Peas, the beauty of a blossom being greatly enhanced by a light green groundwork of crumpled muslin on which the flower glasses were placed, and against which flowers of almost every tint showed to perfection. We do not suppose that this sort of setting admits of improvement. All the best varieties were shown, and a selection must be made, we would, among blues, name *Begonia*, deep purple; *Captain of the Blues*, Navy Blue, C. E. Wilkins, and Duke of Westminster. Of pinks, *coccinea*, Lady Mary Currie, Countess of Powis, Triumph, Lord Kenyon, George Gordon, Chancellor, and Oriental. Other fine varieties were *Salopian*, Oriental, Aureole, Prince of Wales, Mars, and Firefly (Silver-gilt Flora Medal).

Mr. J. DOTY-LAS, Elderside, Great Bookham, showed Carnations and Peonies, including many very choice and pretty novelties; besides those that received an Award of Merit. *Seymour Corcoran* is a primrose yellow flower, with regular, smooth edged, cupped petal, a circular bloom with unspilt calyx. *Ensign* is similar in every point, but is white; the grass being of moderate strength in each case.

Mr. G. YELD, Clifton Cottage, York, showed *Hemerocallis Pioneer* x H. *Thunbergi*, and H. *disticha*, single flowered species of a bright orange tint.

SIR TREVOR LAWRENCE, Bart., showed *Spiraea callosa pinnica*, of a deeper tint than the type; also *Hebe-streitia comosa*, having an inflorescence similar to the New Zealand *Veronica*—a South African species.

Awards of Merit.

Arctostaphylos grandis.—Flowers nearly 3 inches across; florets white, shaded with heliotrope on the outside, with yellow ring around the disc, which is of deep heliotrope colour. Shown by Mr. A. W. WADE, Riverside Nursery, Colchester.

Campanula lactiflora varietalis.—Some exceedingly strong flowering growths of this were shown by Mr. AMOS PERRY. The colour of the flowers is like that of Lavender, with nearly white centre.

Candy-stalk "Rose Cardinal."—This variety was grown in Chiswick Gardens from seeds supplied by Messrs. Watkins & Simpson, Tavistock Street, Strand. It has a very good habit of growth, and branches considerably. The colour is rich rosy-carmine.

Carrotion Ensign.—A very fine white border variety of large size, with exceedingly good petals, minutely fringed at the margins. The calyxes are not so good as they might be. Shown by Mr. DOUGLAS.

Carrotion Segonaire Capricorn.—A first-class border variety of buff-yellow colour. Shown by Mr. DOUGLAS.

Lilium x Babolnki.—Flowers of this variable Lily were shown by Sir TREVOR LAWRENCE, G. S. PERRY, Esq., Newton Abbot, Mr. AMOS PERLEY, and Messrs. WALLACE & Co. From the appearance of these flowers it would seem obvious that the name Babolnki has been given to hybrids of different parentage, or from unselected varieties from the same stock-pond. Mr. Perry's flowers were not strikingly good, but resembled a poor form of *L. pardalimum*, except that the growth was stronger and bore more flowers upon very long pedicels. Those from Sir Trevor Lawrence were quite

From the Horticultural College, Swanley, Kent, were shown some large Melon fruits of several varieties. Cultural commendation.

H. P. STICKS, Esq., Givans, Leatherhead, Surrey (grt. Mr. W. Peters), exhibited fruits of Strawberry Givans' Late Profile, which was recommended an Award of Merit at the last meeting of the Committees at the Drill Hall.

A collection of fruit given within two miles of Charing Cross, was of exceptional interest at Chiswick, because it showed that very fine results are possible of attainment, even so close to the heart of the Metropolitan. There were six Melon fruits in several varieties, not of large size, but capably finished; Tomatoes Golden Jubilee, Sunbeam, and Perfection; fifteen dishes of Gooseberries, two dishes of Red Currants, one dish of Plums, obtained from a post-tree, which has ripened the fruits in its open; about twenty good fruits of Diamond Peach, and a dish of Superlative Raspberry Silver Knight in Medal.

LORD LANGRISH, K. The Herds, Monmouth (grt. Mr. T. Coombs), exhibited a collection of eighteen excellent

Melon Victoria, from a cross between *Syon House* & *Stilton's Epicure*. It was recommended an Award of Merit at Chiswick, see p. 36 of our last issue.

Eloagnus edulis in fruit was shown by T. T. STANSON, Esq., Aldermanston, Reading. The reddish fruits were exceedingly acid.

MESSRS. R. VERNON & SONS, Exeter, exhibited pots of *Psoralea* of Devon, a good plant crop wrinkled *Mazoe* growing about 4 feet high. It was recommended an Award of Merit by the Royal Horticultural Society on July 11, 1900.

MR. ALFRED WILKINSON, The Gardens, Bucklebury Place, Woodlinton, Berks., exhibited a fruit called Melon Best-of-All, a green-fleshed variety, and Melon Royal Favourite, with white flesh.

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited fruits and foliage of Strawberry The Khedive, a deep red coloured fruit, with prominent seeds and good flavour; the result of a cross between Lord Sunfield and British Queen.

AWARD OF MERIT.

Staphylea trifolia *Algaridii*, exhibited by Mr. ALFRED WILKINSON, Mandley Road, North Walsham. There were no fruits for inspection after the Committee had risen.

The Lily Conference.

This most important feature of the day's proceedings proved to be very interesting. Mr. H. J. ELVES presided, and amongst those present were Mr. J. G. BAKER, F. B. S., Dr. Henry, Geo. Masson, Capt. Scoble Reid, G. Yeld, R. Wallace, F. W. Moore of Glenview (Dulwich), and George Nicholson.

In opening the proceedings, Mr. Elves said that when he was abroad, and it was uncertain whether or not he would be able to be present at that function, he had been allotted the task of writing a paper upon the new Lilies if it had been introduced or discovered since he published his book upon these plants. Mr. Baker, however, had written such a paper, and he had the greatest pleasure in calling upon that gentleman to address the audience in his stead.

MR. BAKER ON NEWLY INTRODUCED LILIES.

Mr. Baker said that the publication of the excellent monograph of Lilies, written by the President of that Conference, constituted an era in the history of the genus. Nothing of the same character had been done since the publication of that work. In the paper from which he was about to read extracts, therefore, he had mentioned the Lilies that have been discovered since, and that those names had not been included in Mr. Elves' book. He proposed to give a description of the characteristics of each, and some information as to their native habitats. Instead of reading the detailed descriptions of them in full, however, he hoped that his paper would be thought sufficiently interesting to be printed in the *Gardeners' Chronicle*, with a report of the proceedings of that Conference.

The two countries that have contributed new Lilies during the last twenty years or so were Upper Burma, from which an excellent collection, including those new Lilies, had been brought home by Sir H. G. Gilchrist and Mr. Boxall, and Central and Western China, which was undoubtedly exceedingly rich in Lilies. Fortunately, Dr. Henry, who had been so successful in introducing Lilies and other species of plants from that region, was present that afternoon. His collection included 3,700 numbers, but amongst these, of course, were many duplicates of species and varieties collected from different localities or habitats or in different stages of growth. Some Lilies had also been collected in Western India by the French, Italian, and German missionaries.

Mr. Baker enumerated the new species in the order familiar to botanists, commencing with the sub-genus *Candidulum*, of which the old species, *cochinchinense*, *claytonii*, and *granatum* (Himalaya), were well known. During the past twenty years this group has been enriched by two new species, The late M. Franchet, of the Jardins des Plantes, Paris, described two new species, one of these is *L. mirabile*, which resembles *granatum* and *cochinchinense* in its general habit and characteristics, it grows strong and high, and bears as many as fifteen flowers upon a stem, having broad ovate cordate leaves. A curious feature of this Lily is that contrary to other species which have centripetal inflorescence, this one is centrifugal, consequently the uppermost flowers are the first to expand. The other new one was *L. Gleditsii*, from the island of Szechuan, which differs from *L. cochinchinense* in several respects, one difference being that the valves of the capsules possess but one nerve.

Passing to sub-genus *L. Edmonium*, which includes *capitatum*, *Brownii*, and *longifolium*, Messrs. Low & Co. had introduced a Lily under the name of *L. Wallichii* among sulphurium. This was discovered by F. WALLICH



FIG. 21.—BULB OF LILIUM GIANTIUM. (SEE P. 56.)

distinct, being larger in size and more attractive in colour. While some flowers in the show seem to be the result of a cross between *L. pardalimum* and *L. Washingtonense*, those of Sir Trevor Lawrence suggested *L. Parryi* and *L. pardalimum*. At present purchasers of this Lily should buy the plants whilst in flower, that they may get the type they wish, as the confusion will be great, especially as each type shown can claim to have received an Award.

Lilium concolor Cochitum. Much like *concolor*, except that the flowers are yellow instead of red. The variety shown on Tuesday had minute spotting. Height about 15 inches. From Messrs. WALLACE & Co.

Fruit and Vegetable Committee.

Present: A. Bean, Rev. W. Wilks, and Messrs. F. Q. Lane, George Wythes, G. F. Miles, S. Mortimer, W. Pope, Jas. H. Vitch, George Kell, E. Beckett, W. E. Tyte, Thomas Coomber, Jno. Escham, J. Willard, H. Balderson, Jas. Smith, Geo. Woodward, Henry E-Rings, W. Pompat, J. Bates, C. Herbin, and W. R. Divers.

Mr. A. Pettigrew, gr. to the Marquis of Bute, Cardiff Castle, exhibited four large fruits of Melon Royale, a white-fleshed variety with yellow exterior, netted white. It was awarded an Award of Merit by the Royal Horticultural Society last year, and is of very good flavour.

lent Pine apples. The fruits, though not of extraordinary size, were of commendable average, and excellent quality and finish. Silver Knight in Medal.

MESSRS. GEO. BISHOP & Co., Royal Nurseries, Maidstone, exhibited a few fruiting branches of varieties of Cherries, to show how far ahead the crop has been in Kent this season. The varieties were Black Eagle, Flenish Red, Old Black Heart, Kent Bigarreau, and Waterloo Heart.

Four fine Pine apples were shown by Baron NATHANIEL DE ROTHSCHILD, Bohle Warte, Vienna (grt. Mr. Roberts). Three of these fruits were Queens, and the other Black-african, which is very little grown in this country. The fruit of this sort is found in (silver Bankian Medal).

MESSRS. W. RAY & Co., Mount Pleasant Nurseries, Teynham, Kent, exhibited a very good collection of Cherries, the fruits being of good size. The large new variety Noble was represented. There were about seventeen varieties shown, including Frogmore Bigarreau, Black Eagle, Black Tartarian, Waterloo, Bigarreau Napoleon. Fruiting spray-illustrated the exceptionally good crops the trees have yielded (silver Bankian Medal).

Mr. Geo. Wythes, gr. to the Duke of Northumberland, Sand, *Syon House*, Brentford, exhibited three fruits of

the Shan States of Upper Burma in 1891, and was nearly allied to, but distinct from, *L. Walliciana* of the Himalayas. It has yellow not white flowers, and the plants produce bulbs in the axils of the leaves. *L. primum* is not so abundant as the last-named plant. It was figured in the *Botanical Magazine*, and differs from *L. Scellbergense*, in having shorter and more expanded flowers. Sir H. Collett collected the plant in 1888 in the Shan States.

L. Bakerianum (fig. 17, p. 15) was originally collected by Sir H. Collett, and was figured in the *Journal of the Linnean Society*. Another Lily was known as *L. Lowii*, both of them having been collected first in Upper Burma. Since, however, they have been discovered in larger quantities in China, and have become better known, it is thought that they will prove to be insufficiently distinct to rank as separate species, and *L. Bakerianum*, having the claim of priority, would have to stand for both, and the name *Lowii* abandoned.

L. rubellum (see fig. 15, p. 12) is a very pretty species, with widely expanding flowers about 3 inches long, and quite unspotted. It was received at Kew in 1898 from Messrs. Bunting, of Chelmsford. It is allied to *L. japonicum*, but has smaller, pink flowers.

L. japonicum var. *Alexandrae* (see p. 34) was introduced from Japan by Messrs. J. Veitch & Sons and Messrs. Wallace, and was exhibited in 1893. It has pure white flowers, grows very tall, and has a habit similar to that of *L. japonicum*.

L. leucanthum was discovered by Dr. Henry near a gorge where the great river of Central China breaks through and forms a beautiful ravine. It is near to *L. Brownii*, but has white flowers, and produces axillary bulbs. *L. forsanum* is only a variety of *L. longiflorum*.

In the *Gardeners' Chronicle* of 1891 there were five varieties of *L. Brownii* described. One of these, *Chlostrae*, is only slightly brown on the outside, and has a green star, which is noticeable inside and outside the flower. *L. odorum* or *colchesterense* may prove to be distinct from *Brownii*. *L. myrianthum*, from W. China, is near to *L. longiflorum*, but differs in possessing narrow segments, and in other details.

The sub genus IV. (*Soliflori*) had been enriched by a new variety of *L. elegans*, known as *Batemannii*; it has large, clear, apricot-yellow coloured flowers, quite free from spots, and was collected in Japan. Future experience with the plant may prove it to be a hybrid.

Passing to the *Archelion* section, much praise was given to *Lilium Henryi*, a magnificent garden Lily, and satisfaction was expressed that its name commemorated Dr. Henry's labours. Combining some of the characteristics of *L. speciosum* and *L. auratum*, the plants grow to a feet high, and flower rather late in the season. The flowers are very distinct, and are bright red or orange in colour. It is one of the very best and distinct acquisitions during the period under consideration. Collected in China, in 1888, the plant appears to adapt itself perfectly to the British climate.

L. Lilium auratum, &c., two noteworthy varieties had been introduced, namely, *tricolor* and *platyphyllum*. The variety *tricolor* differed from the type in being more robust, having broader leaves, more veins, no spotting in flowers, but copious papillae. *Platyphyllum*, from Central China, is very large in size, and richly spotted with brown.

L. oxypetalum, which has been introduced since the publication of Mr. Elwes' Monograph, has been transferred to the *Fritillaria* genus.

L. Delavayi is near to *Fritillaria*, and was found in Yunnan by Father Delavay. It has erect flowers, which expand widely, in colour wine-red, and spotted.

L. yunnanense is a very distinct species, collected by several persons, has a widely expanded perianth, some 1½ to 2 inches wide, and is of reddish colour.

Turning to the *Martagon* group, Mr. Baker went on to say that the majority of the new Lilies for the past 20 years belonged to this group. *L. Heldreichii* (Greece, 1850) is allied to *L. carnioleum*, has bright red flowers, distinct, 2 inches long, and like all of the *Martagon* group, the petals reflex.

L. ochraceum, from Yunnan, is near to *L. monadelphum Szovitsianum*, but would prove to be distinct. It has yellow flowers. *L. Jankei* is near *L. pyrenaicum*.

Several other species, including *sutchense*, *Wallacei*, *Duchartrei*, *papilliferum*, *L. Fargesii* (nearly allied to *L. tenuifolium*), were mentioned before Mr. Baker referred briefly to—

NEW AMERICAN SPECIES.

Regret was expressed that Carl Purdy, who knew more about American Lilies than anyone else, was not present. *L. nitidum*, with bright yellow flowers, was introduced by Mr. Bull in 1880. *L. Grayi* was collected in Virginia and in North Carolina, and has reddish-orange coloured flowers, with spots. *L. occidentale* of Purdy is near to *L. parvum*.

Summing up, Mr. Baker said at present it appeared

there were thirty-five distinct species and varieties of Lilies that were not included in the Monograph. Many of them are not at present in cultivation, and though some of the West China *Martagon* species may prove to be synonyms, most of the Lilies mentioned would probably be found to be true and distinct. The two best of the acquisitions were *L. Henryi* and *L. rubellum*.

The CHAIRMAN said that all had listened with very great pleasure to Mr. Baker's paper. Mr. Baker, by publishing his excellent "Synopsis of Lilies" in the *Gardeners' Chronicle* in 1871, had enabled the Chairman to write his monograph upon that foundation. It was not sufficiently recognised by horticulturists how deeply they were indebted to botanists; and there were some botanists who failed to appreciate that the opposite was also true. In the work of describing new plants, especially Monocotyledons, as Lilies, Irises, Orchids, &c., it was very necessary for the botanist to have before him living specimens. In preparing his monograph, Mr. Elwes had made it a point to exhaust every possible means to obtain fresh specimens, and of the fifty-two known species then supposed to be distinct, he had forty-eight in a living state. Of the new Lilies Mr. Baker had described, there had been introduced to cultivation only seven or eight; and Mr. Baker had shown that much work still remained to be done. Mr. Elwes believed that in W. China and Thibet there was a vast amount of horticultural novelties awaiting collection. Messrs. Jas. Veitch & Sons had there at the present time a capable man (Mr. Wilson), and great results were expected. After enumerating some of the difficulties and dangers that collectors had to face, Mr. Elwes declared that the difficulty in cultivating many Lilies in this country arose from circumstances of climate, rather than of soil. Without wishing to dishearten any cultivator of Lilies, he could but admit that unless one's garden enjoyed an exceptional situation, success in respect of many of the species would be very difficult of attainment. Since removing to his present residence, he (Mr. Elwes) had been unable to cultivate any Lilies perfectly.

DR. HENRY ON CHINESE LILIES.

Dr. Henry, who, as already mentioned, is thoroughly acquainted with the habits of native plants in Western China, said that when in that country he was seeking plants of all description, and therefore did not pay special attention to Lilies. Most of the new Lilies of China collected by French missionaries were collected at great elevations on the mountains, which were richer in species than the district examined by Dr. Henry. Alluding to the fact of Mr. Wilson collecting in the neighbourhood of Y Chang for Messrs. Veitch, Dr. Henry said that there was ample work for a hundred collectors in the mountain district of W. China and in Thibet, where in every valley there was a different flora. Y Chang was 1,000 miles inland, but at an elevation of only 50 feet above the sea level, so that the Yantze Kiang River afterwards flowed 1,000 miles through a vast alluvial plain, falling only 50 feet before it reached the sea. The mountains, on the other hand, attained a height of from 2,000 to 25,000 feet, and presented thousands of mountain elevations and puts continuous with the Himalayas. The summer temperature of Y Chang is as much as 70° Fahr. in the shade, and in winter fell to 20°. In the depths of some of the gorges, *L. Brownii* was common, and showed a large amount of variation. *L. tigrinum* Dr. Henry only saw in a cultivated state near Y Chang. *L. Henryi* occurs only in two localities near Y Chang, growing on grassy slopes up to 2,000 feet elevation, either on conglomerate or limestone soil. Unlike *L. Brownii* it always grew in exposed situations in a considerable degree of cold. In the inland mountains at a height of 6,000 to 10,000 feet, grew a small Lily, *L. tenuifolium*, or perhaps *L. Fargesii*. *L. gigantium* occurs in the depths of high mountain forests, and never on exposed grassy slopes. The flowers vary in colour, but are generally nearly white. *L. leucanthum* occurs in the province of Yunnan at an elevation of 1,000 feet. In the same district *L. nepalense* has been collected recently by Mr. Wilson at an elevation of 1,000 feet.

MR. YELD ON LILIES IN A TOWN GARDEN.

In this paper Mr. Yeld gave details of his experience in the culture of Lilies in a town garden in York. His garden possesses all the usual characteristics of an ordinary northern site, except that it is provided with effective shelter from the winds. *L. Martagon* varieties succeed well, and do not object to shade even under pear-trees. *L. Hansoni* does well, but commences to grow early in spring, and is liable to be injured by frosts. *L. testaceum*, *chalcodoniun*, *Humboldti*, *canadense*, and *Washingtonianum*, do fairly well. There is one

clump of *L. chalcodoniun* in a neighbouring garden that has been in the same position for twenty years, and still thrives. Amongst many other Lilies alluded to, *L. colchicum* was mentioned as the finest of all, and though it was ten or eleven years before flowering, the subsequent result fully compensated for that delay. Referring to the cultivation of Lilies generally, Mr. Yeld said that under general circumstances better results followed the planting of bulbs amongst tree roots than in ground by themselves, but this year the rainfall had been so inefficient that those in such a position had fared worst.

MR. WALLACE ON THE CULTURE OF LILIES IN POTS.

Mr. Wallace's paper contained an enumeration of those species that are most valuable for cultivation under glass, whether for forcing to flower in May or June, or to be encouraged gradually to cool houses, a method by which such fine Lilies as *L. speciosum* and *auratum* can also be grown to their very best condition. In such houses also, the Lilies may be planted in clumps, in tubs, or in similar large receptacles, or they may be planted out amidst species of greenhouse ornamental foliage plants, as in the new wing of the temperate-house at Kew. A good example of growing *L. auratum* in the manner described above was figured in the *Gard. Chron.*, February 15, 1873, p. 215. The specimen bore 225 buds. Among the Lilies recommended for May flowering were *L. Thunbergianum*, and *L. umbellatum*. Of the former, such varieties were mentioned as *atro-sanguinea*, Prince of Orange, and Orange Queen; and of the latter, *erecta*, Cloth of Gold, &c. *L. tenuifolium* was of great use, but required to be started into growth over a little bottom heat. After mentioning *L. excelsum*, *L. Hansoni*, and *L. Dalhousii*, Mr. Wallace said that the new *L. rubellum* was a perfect pot plant, and that growers of this Lily must not be discouraged if the plants appear very weakly when pushing through the soil; it is a common circumstance. *L. Henryi* must be started earlier to get it into flower at the same season. It is suitable for the purpose, but grows very tall. When the flower-buds show colour, remove the plants to a little shade, and the colour will then develop more perfectly. *L. giganteum* must not be afforded much heat, especially if moisture be lacking. If placed in a cool vinery, where they will progress gradually, a good result will follow. *L. odorum* [= *japonicum* colchesterense, see supplemental illustration in the present issue], if grown in much warmth, has no external colour on the flowers, but it will develop colour if the plants are removed whilst in the bud to a cool frame, and slowly graded. *L. Brownii* should be treated quite similarly, and will bloom early in June. *L. longiflorum* was mentioned as the one Lily most suitable for greenhouse culture. If very early flowers are needed, the variety *Harrisii* must be used; but for all other purposes the Japanese bulbs will give best results. *L. Martagon* and some others of the same type, need to be established in pots for a year before forcing them. The variety *album* might be used with the type, but all the *Martagon* Lilies, though very suitable for culture under glass, were not the best adapted for early forcing.

Mr. Wallace proceeded to speak of the advantages to be obtained from the cultivation of Lilies in unheated glass-houses for blooming in the summer months. *L. auratum* and *speciosum*, *parlatianum*, *tigrinum*, *chalcodoniun*, are all suitable for this purpose. As a preparation for flowering Lilies in May, thorough good bulbs should be potted up in early autumn, and placed in cold frames, from which they can be removed to heat in batches as required. The general conditions governing success in the matter of Lily culture in pots were as follows:—Keep them cool at the roots, afford requisite shade, and plenty of ventilation, taking care at the same time to avoid cold draughts; frequently syringe the plants, and damp the exposed surfaces in the house, as walls, &c.; afford each plant sufficient room, using over-sized pots rather than any that are in the slightest degree too small. Put the bulb in centre of the pot. A good soil for Lilies is one of 2 parts friable loam and 1 of leaf-soil. Species that produce basal roots require soil of a stiffer nature. Fumigate the plants with a safe vapour, as often as is necessary to keep them quite clean. Weak liquid cow-manure will be beneficial to the flowers, and lime and soft water is useful to keep the leaves in good condition.

The CHAIRMAN said a few words in recommendation of the greenhouse system of culture, and referring to the manner in which they are flowering in the temperate-house, Kew, said that if a house was devoted to Lilies, he thought the result would be acceptable to anyone. He (Mr. Elwes) emphasised the importance of having other plants mixed with their Lilies out-of-doors or in temperate-house borders. Out-of-doors, such vegetation

prevented the soil getting water-logged in winter, or dried up in summer.

MR. E. H. JENKINS also spoke strongly in favour of the practice, and referred to some successful results he had at Sycleham Hill with L. giganteum and other species. He recommended that bulbs of L. longiorum should be planted 8 to 12 inches deep, and that plenty of sand be used about them. Mr. Jenkins had been pleased to hear from Mr. Yeld a reference to the culture of bulbs from seeds, and the new species, L. Henryi, yielded seeds freely, so that the system could be easily tried in that case. L. pardalinum and others of the peat-loving section required strong shade, and it was recommended they should be planted 3 inches deep, and deluged with water and manure. Mr. Jenkins declared that we had been too timid in the use of manure for Lilies, and said that L. giganteum, and some other species, would consume it greedily.

CAPTAIN SAVILE REID ON LILY DISEASE, &c.

Captain SAVILE REID read only a very few extracts from his paper. Speaking of the white Mollusca Lily (L. candidum) disease, Capt. Reid said that six years ago, when removing to his present residence in Kent, he found the garden well stocked with L. candidum along the grass border. Afterwards he found that a disease attacked them, and caused the leaves to wither from bottom to top. Upon reading a letter in the Horticultural Press upon the subject, Capt. Reid dug up the whole of his 450 bulbs in the autumn, dried and cleaned them a little on the floor of ainery, and shook them up in bags containing sulphur, about four or six in a bag. They were out of the ground not more than forty-eight hours, except several bulbs which were forgotten, and here was an unexplainable incident. The bulbs that were forgotten, and remained in a bag of sulphur for a month or six weeks, were finally planted in an odd corner of the garden, and they grew and flourished better than those which were returned to the ground immediately. The others, however, did sufficiently well to prove that the sulphur had destroyed the fungus-past. Two years after the sulphur treatment, there were fifteen flowers on some of the spikes.

Capt. REID had found that L. monadelphum exotissimum succeeded best when planted in a position where the morning sun will find it, as a south-westerly position. A curious incident was related about the little L. Perryi. Capt. REID, with several other gentlemen, bought some bulbs of L. Perryi from Capt. Purdy. They had six each, and all of them proceeded to imitate the natural conditions in which they supposed this "Flag Lily" to grow. But Capt. Reid's water-pipe, which he supposed would deliver water and keep the situation damp, got stopped, and the land opened in conjunction with excessive drainage he had provided to carry away some of the water thus artificially brought. However, it appears that Capt. Reid's bulbs flourished, and those belonging to his friends did not. He had thirty-five flowers upon one spike, and one year had fifty flowers from his six bulbs. This year they had only seven flowers, but it is evident the bulbs are breaking up into sets.

The CHAIRMAN said that he had visited the site in South Carolina where L. Perryi had been discovered, and thought it was practicable there to divide the species as a bog Lily, it was unsuitable to English and Riviera, inasmuch as from March until October there fell next to no rain in that district. He, Mr. Elwes, did not think that all the Lilies were truly perennial. Some of them were only three years from seedlings before they flowered, and this circumstance, together with the fact of so many species as L. Tomingtonii dying after producing seed, seemed to prove them not to be long-lived perennials.

For twenty-five years Mr. Elwes had grown L. concolor, and all the time the plants had grown well yet have never flowered. He cannot flower the species, nor has he yet succeeded in killing it should it flower and perfect seed. Mr. Elwes believed the plants would die. Cultivators were advised to sow seeds of Lilies as soon as they ripen. Most of them will then commence to grow in the following spring, but those of L. candidum will commence to grow during the same year as soon as the same time as the other plants produce their autumnal leaves.

MR. MASSEE ON THE DISEASES OF LILIES.

Mr. Geo. Massee, of the Horticultural Royal Gardens, Kew, said that in all there were forty or fifty species of things that delight to feed upon Lilies, and declared in the midst of a company of Lily admirers, that many of the fungi were very much more beautiful than the

Lilies. The erubescens present must have been somewhat relieved, however, when Mr. Massee proceeded to state that one fungus only was of much importance in this country. This mildew Botrytis sp. was first described by Professor Marshall Ward, and Mr. Massee supposed that everyone was familiar with it now. The fungus can exist perfectly without the Lily, meeting with all that is absolutely necessary to its life in the humus of the soil itself; but after remaining in the soil perhaps for many years, and a Lily bulb was put near to it, the fungus found that the food it required was provided in a much more concentrated form, and Mr. Massee said that the fungus having some degree of discrimination, proceeded to feed in the best layer. The remedies recommended were purely those of prevention. When the fungus has got onto the tissues of the Lily plant, it could not be killed and the Lily saved. A method of protection recommended was that of planting the bulbs with a few inches of sand surrounding it, and the sand might be mixed with a little sulphur. The growing tip or the fungus on entering the sand would find no food, and would be unable to proceed further towards the bulb. Then Mr. Massee described the effect of Kautt-Strassburg Fertiliser, which he said would kill the mycelium of any fungus known to gardeners, were therefore recommended to remove the surface soil from their Lily beds every year, and top-dress with fish-bait soil, which should be mixed a little of this fertiliser. The second fungus, a sort of red Fraxinus cythronia, was present on most Lilium species, but it had not attacked Lilies very generally in this country, and the third species, was discovered in Japan, which had got hold of some of our bulbs during the passage from Japan to Europe.

We have some sympathy with the feeling that expressed Mr. Massee to the need some action of the proposed cultivators. He declared that many know the common remedies of good night doses, but most of these were possibly objected to through their very simplicity. Our experience shows that there does not lack foundation for his last statement.

After Mr. Massee's talk in a word with the gardeners, the Chairman moved a Vote of Thanks to the Council of the Royal Horticultural Society for providing the means for holding the Conference, and after well-deserved thanks had been accorded to Mr. Elwes as President, the company separated.

The literature of the Conference which has been published in *the Gardeners' Chronicle* will be another valuable contribution to the work. We so much information upon many subjects from time to time been gathered.

BIRMINGHAM AND DISTRICT AMATEUR GARDENERS'.

A LATTER was held at a private meeting at the Birmingham and District Amateur Gardeners' Association by Mr. H. T. MANN, Secretary, at Abbots Bromley, and there was a splendid attendance of members and friends.

Mr. Martin closed for his subject "Hardy and Open-house Climbing Plants," and the information he gave about the habits and peculiarities of each variety was most interesting, and could not help but be of benefit to those amateurs who are endeavoring to grow some of these truly beautiful plants, many of them, it is feared, under rather adverse circumstances.

The lecturer gave a list of those plants in both sections most likely to be chosen of all the amateurs at a large town, and strongly recommended everyone, before planting, to properly prepare the border or bed, and of attention to this point was the cause of many failures.

At the conclusion of the paper, a hearty vote of thanks was rendered to Mr. Martin for his very able paper.

ABERDEEN ROYAL HORTICULTURAL.

Not a little success of feeling has been engendered in horticultural circles in Aberdeen towards the action of the Aberdeen Town Council towards this society in the matter of granting it the use of the Duffell Public Park for its annual show next month. Some time ago the directors of the society applied for and were granted the use of garden's college grounds for their show, but it was afterwards discovered that the permission thus given did not, in former years, include the use of rooms in the Art Gallery, which sit on the grounds. Under these circumstances the directors asked of the Council the use of the Duffell Park for three days. This was refused unless the society understood that part of the park required. To have done this would have cost £100 and besides, the

society would not have had the advantage of the use of the park as a whole. The Council contend that they have no right to restrict the public use of the park, and that it would be perfectly legitimate for any payer to prevent himself at the gates and demand admittance without payment. This is all very true, but in the past, when the use has been granted, that rate payer has never yet presented himself. The society is a purely educational, and not a money-making concern. Indeed its finances have been on the wrong side for many years. Two years ago it experienced a never-to-be-forgotten catastrophe, when a hurricane levelled the show with the ground. The Society was only saved a serious loss by their having been no collection, hence no prizes had to be paid. Nevertheless, the effort was apparent on the show of last year, which resulted in a loss which the esteemed Chairman of the Society, Mr. William Pyper, of Hillhead, most generously made good. Under all these circumstances, the Society are not to be blamed if they looked for more generous treatment at the hands of the Council than has been meted out to them at this time.

LEEDS PAXTON.

July 19. The members of the above Society had their annual excursion conjointly with the Harrogate Gardeners' society on the above date, when a visit was made to the nurseries of Messrs. CURRY & SON, Altham. The party, numbering about one hundred persons, arrived at Manchester at 9 A.M., from whence they were driven to Altham by Messrs. CURRY. The branch nurseries at Altham were first visited, which contain fruit and forest trees, hedge and covert plants, conifers, shrubs, &c. From Altham, the party were driven to the Cemetery Nurseries, where there are more fine conifers, and to the Stamford Nurseries at Bowdon. Here we have some fine containing Ferns, Fuchsias, Aspidistra, some fine Impatiens, and some specimens of that lovely plant, *Fuchsia macrostemon*. Outside were noted some rare shrubs, conifers, and other choice species. Luncheon was provided at the Altham Hotel. Altham, being the chair being taken by one of the representatives of the firm, in the unavoidable absence of Mr. CURRY.

After the visitors and hosts had tasted the Royal Garden, which, amongst other things, some fine specimen Hollies were noted.

Despite the intensely hot sun, the contents of the numerous glasshouses were inspected, much admiration being expressed at the Crotons, Roses, Camellias, Arums, and Figs. There are also collections of stove, greenhouse and indoor plants generally. One set of doors were noticed open, and the house was now by itself and the visitors regretted that time would not permit them to visit the "Camellian" grounds, where such subjects as Rhododendrons, Prives, and Poplars, are grown in large numbers.

After taking tea at the Lincoln Hotel, and allowing the claim of the inevitable camera, the party returned to the city, and subsequently left Manchester for Leeds at 2.15 P.M., after spending a profitable and enjoyable day.

MARKETS.

COVEY GARDEN, JULY 18.

PEAS IN PODS. AVERAGE WHOLESALE PRICES.

	s	d		s	d
Adiantum, doz	3	0	Ferns, small, per		
Achocha, var.,			dozen	4	0
per dozen	4	0	per doz	1	7
Aspid. sp. doz	14	0	Fielding plant,		
specimen, ca	5	0	per doz	1	0
Camias, per doz	18	0	Fuchsias, each	1	5
Croton, per doz	18	0	Fuchsias, per	3	0
Cyrtandra, doz	5	0	dozen	3	6
Dianthus, var.,			Marguerites, per		
per dozen	12	0	dozen	8	12
Hyacinth, doz	5	0	per doz	8	12
Eryth. var. doz	12	0	Myrs, var. each	1	0
Enonymus, var.,			specimen, ca	2	0
per dozen	6	18	Pelargoniums		
Euphorbia, var.,			per doz	8	12
per dozen	4	18	Taxal, per		
per dozen	4	18	dozen	8	12
			Spiraeas, per doz	8	12

CUT FLOWERS, &c. AVERAGE WHOLESALE PRICES.

	s	d		s	d
Asparagus-Fern,			Lily of Valley, p.		
per bunch	1	0	per dozen	0	12
Callias, per			Mockingbird Fern,		
dozen bunches	1	0	doz. bunches	1	0
Callias, p. doz	0	12	Mignonette, per		
per doz	2	5	doz	1	0
Cyclamen, doz	0	10	Oxalis, per		
Lilium Hartum,			dozen	2	0
doz. bunches	2	10	Roses, Tea, white,		
Lilium Lancashire,			per doz	1	0
doz. p. doz	2	0	of the fine		
blooms	1	0	per doz	1	0
Lilium tuberosum,			doz	2	0
per doz	3	0	per doz	5	0
Lilium tuberosum,			Saxif. p. bunch		
per dozen	2	0	per bunch	0	9
			Saxif. & per		
			doz. bunch	0	9

FRUIT, AVRAAGE WHOLESALE PRICES.

Table listing prices for various fruits like Apples, Apricots, Bananas, Currants, Figs, Grapes, etc. Columns include item name and price per unit.

THE WEATHER IN WEST HERTS.

The present spell of warm weather has now lasted nearly a month, but the highest temperatures of this period were registered during the past week...

VEGETABLES—AVERAGE WHOLESALE PRICES.

Table listing prices for various vegetables like Artichokes, Beans, Broccoli, Carrots, Cabbages, etc. Columns include item name and price per unit.

ANSWERS TO CORRESPONDENTS.

APPLE-TREES NEWLY PLANTED FAILING TO GROW OR BLOOM; A. H. O.K. We can only suggest the drying of the roots in the period between the digging up the trees at the nursery...

REMARKS.—Some Mediterranean Peas from Madeira in boxes have come to hand, and fetch 2s. Plums and Gages, etc., in boxes the first sold from 8d. to 9d.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period July 1 to July 18, 1901.

Table with columns for Day, Direction of Wind, Temperature of Air (Day, Night), Rainfall, and Temperature of Soil (at various depths).

IRON TANK; W. B. If you have reasons to suppose that the water is injurious to the Orchids, you might give two or three coats of hot lime-wash.

LIME LEAF; A. H. The Nail Gall, caused by a fly or mite.



FIG. 22.—THE POPLAR GALL. The galls are produced by an aphid (see fig. 22).

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to contribute the following number.—J. B. S., Caterham, Catalpa siringifolia, W. S. 1, Rhus typhina, 2, Colutea arborescens; 3, Lonicera Ledebourii; 4, Berberis buxifolia; 5, Spiraea Fortunei; 6, Berberis vulgaris; 7, Spiraea opulifolia, D. B., Leyland, 1, Phloxis antiochia; 2, Hedysarum multijugum; 3, Spiraea emeacens; 4, Sophora microphylla; 5, Sophora tetrapetala; 6, Quercus glabra.—GRASSES: T. C., 3, Festuca ovina; 1 and 2, not recognised; send when in flower.—J. W. L., Ltd., Oxidium hastatum, sometimes called Oxidium stelligerum, and Odontoglossum hastatum.—T. F. B., Dendrobium chrysanthum.—J. H., Leicester, Cattleya Warneri and Brassia verucosa.—P. L. H., Bifrenaria racemosa.—A. W., Schomburgkia Thomsoniana; see report of the Royal Horticultural Society's meeting, in the Gardeners' Chronicle, July 6, p. 15.—P. F., Galium verum.—Hughes, 1, Potentilla flabida var.; 2, Liatris spicata; 3, Lysimachia clethroides; 4, Dieentra eximia; 5, Helianthus multiflorus, double fl.; 6, Tradescantia virginica.—J. B., Adiantum canescens grandiceps and Polypodium aureum.—W. D., Tunc, 1, Adiantum formosum; 2, Pteris Wimsettii; 3, Adiantum capillus-veneris; 4, Adiantum concinnum; 5, Adiantum concinnum latum; 6, Selaginella Willdenovii.—A. D., Brentwood, Salvia leucantha.—Bob, 1, Phifesia buxifolia; 2, Ceanothus azureus; 3, Thalictrum majus; 4, Galega officinalis; 5, Spiraea callosa; 6, Sidalcea malviflora.—A. E. L., 1, Veronica Andersonii; 2, Dieentra eximia; 3, Centranthus ruber; 1, Spiraea; 5, Rhododendron hirsutum; 6, Astrantia major.—F. W. C., Lychnis chalcedonica and Galega officinalis, var. alba.—W. T., 1, Magnolia cordifolia; 2, Castanea vesca (Sweet Chestnut).—W. M. B., 1, Taxodium distichum; 2 and 3 not recognisable; 2 looks like a leaf of one of the deciduous Magnolias.—G. B., Galium verum.—Mrs. A. P. C., Ficus repens, also called stipularis. When growing against a wall it has small leaves, and does not produce fruit. When grown as a standard, the leaves after in form and fruit is produced.—J. McG., 1, Iaula Helenium; 2, Alstromeria pelegrina; 3, Malva moschata; 4, Catnanche corollata; 5, Helianthemum; 6, Campanula pusilla alba.—F. S., Birkenhead, Olearia macrodonta.

PAYMENT IN LIEF OF SERVICE; H. H. If what you say is correct, the would-be employer is not entitled to a halfpenny.

POTATOS; J. D. I. The tubers have most likely been induced to make fresh growth by the liquid manure applied.

ROSE-BUDS NOT EXPANDING; S. D. Very dry weather checks growth as much as does cold at times. The Roses have probably suffered from both causes in your case.

TOMATO PLANT; Elmwood. We can see neither fungus nor insect. Have the leaves been wetted while the sun was shining.

VINE-LEAF; Brownell. Materials insufficient for the purpose. Send better and more leaves as well as shoots, and state where grown, and how.

VIOLETS IN FRAMES; Alpha. A mixture of loam, run through a half-inch meshed sieve, and finely sifted, well-decayed leaf-mould in about equal proportions. Failing the leaf-mould, employ well-rotted stable dung, or disused hot-bed materials, and peat tolerably free from sand, in about equal proportions. We are unable to decipher the whole of your second query; please repeat in legible handwriting.

COMMUNICATIONS RECEIVED.—C Tyley & England Bros., Ltd.—G. B. M.—Midland Cattle and Poultry Export—A. A. E. O'N.—A. C. T.—W. E. G.—G. B. H.—D. R. D.—E. Coleman, no space this week.—G. C.—J. D. G.—W. J. G.—F. T. M.—P. R. W.—J. W. G.—W. W. Garton, Junior.—E. H. Greenwood, Messrs. Stiffell and G. H. Davis.—W. Gardiner.—R. C. Cartwright.

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—A. C. F.



LILIUM JAPONICUM VAR. *COLCHESTERENSIS*.



THE

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THE WOODS OF SURREY AND SUSSEX.

IF the regeneration and re-stocking of woods be necessary anywhere in England, it is in these two counties. The Surrey and Sussex woods are typical examples of the underwood system, and so far as timber crops are concerned, are probably the least valuable in Great Britain at the present time. I have lately seen many woods in the above counties, and have been struck by the excessive quantity of underwood everywhere, and the thin-sprinklings of timber amongst it, consisting mostly of Oak, and some Ash. On nearly every estate it is the same, and the problem of re-stocking the woods in these counties is likely to be a difficult one. The underwood is worthless, or next to it, as it cannot be got rid of, even to pay expenses, and if it were removed the timber trees left would not constitute a quarter of a crop, and they

could not be removed without denuding the landscape.

In the north of England and in Scotland there are plenty of woods consisting wholly of timber trees more or less thick on the ground; but south of London, and far to the west, it is almost everywhere standards over coppice, and the standards are far apart, from 10 to 20 yards in many instances. The Surrey Oak, too, is small for its age, the trees containing about as much top-wood as trunk, or more. In a mature wood of Oak, where the underwood had been cut for generations, the trees were not worth more than £2 each, valued at the highest price per foot. On the good land of Surrey and Sussex, in a favourable climate, one might expect to see fine Oaks if anywhere, but as a rule they are small. The trees are not dying, but they are stunted to a degree not general elsewhere. The branches have numerous ramifications, and the annual growths are very short, denoting slow growth. Wherever the Oaks have been grown with underwood they are short-stemmed. They have kept a clean trunk to the height of the underwood, having been drawn up to that height by the latter, but above that they have spread out into broad tops of the roughest description. In some woods between Horsham and Brighton, what are called wood surveyors, had been at work valuing standing Oaks, and I found that nearly the whole of their valuation lay in the trunks of the trees, very few of which exceeded 15 feet in height, all the rest being top, worth next to nothing.

The periodical cutting of the underwood appears to have had a bad and retarding effect upon the timber trees, which have been subjected to alternate periods of shelter and exposure. The rule everywhere appears to be to sweep away the whole of the underwood at periods ranging from seven to twenty years, and I can conceive of nothing more naked-looking and exposed than an Oak-wood quite cleared of its underwood, nor of any practice more likely to injure the timber trees. After the underwood has reached a certain height, it affords just the kind of protection to the trunks of the trees and soil that they need, and what continental foresters aim at by density of canopy; but when the underwood is cleared away, the effects of exposure to drought in summer and cold in winter must be disastrous, and may be compared to the exposure of a plant brought out of a hothouse without being "hardened off" to the open air. I am much mistaken if this system of sweeps and chills is not the cause of the slow growth in the Oak-woods of Surrey and Sussex, and their peculiarly stunted tops.

The difficulty now with these woods, consisting of standards over coppice is to determine what to do with them, as in most cases that I have seen they are in a worse plight than woods that are undercropped but not encumbered with worthless underwood. The latter the owner has but to regulate, clean, and plant up to the full crop condition; but in the case of the former the underwood is in the way, and cannot be got rid of without much trouble and expense, while the standards are already too few on the ground to constitute a crop, and replanting in a dense jungle of coppice is impracticable.

All that can be done in such a case is to convert the underwood into timber trees

by thinning and regulating on the plantation principle, but that can only be done where the underwood consists of the right species, such as Ash, Sycamore, Elm, or Oak, or any other species that will grow into trees. Fortunately indeed, by comparison, are those owners whose underwood consists of these species, for on some estates there are hundreds of acres of underwood that consists chiefly of Alder, Hazel, witley-wood, saughs, and the like, that cannot be converted in the way suggested, and the owner has no alternative but to clear completely and sow or replant.

But even where the underwood does consist of timber-tree species, care and judgment are required in thinning and regulating. I find it is a very common opinion in the south that "stools never produce trees," and there is a good deal of truth in the saying. Still, the fact is well known that second and even third crops are often got from old stools of such species as Oak and Ash, for example, although it is also true that trees from old stools are often hollow at the bottom. The decay from the old stool seems sometimes to extend to the base of young trees that spring from it, although the trees may be healthy at the top. I have often seen mature Oaks from old stools, not one of which was quite sound at the base. In underwoods, however, much depends upon the age of the stools. I would not like to say how old some underwoods are that I have seen, but acres upon acres are to be found on many estates where the stumps are from 3 to 4 feet high, and which, it can be seen, have been cut over at periods of from fifteen to twenty years for generations. Such stools or stumps, I can well believe, never produce trees. So rotten are some of them, that the foot can be shovelled through them; the living branches just spring from any portions that are alive. This is underwood in the last stage, and the only trees that may be originated from such stools are those that push strong from the base of the stool close to the soil. These are always the strongest, and produce independent roots of their own. I have seen nice Ash and other poles that have grown up by chance in such cases, containing from 6 to 10 cubic feet of timber, but shoots produced higher up on old stools are worthless and short-lived.

In underwood culture there has been much bad work, as in other matters connected with forestry. Careless cutting, and the leaving of long snags annually, have produced tall, weak stools; but in some parts where close cutting has been the rule, the stools hardly stand above the ground level. These produce the strongest underwood and the best trees, as all the growths are produced from close to the soil.

To clear worthless underwood crops completely off the ground preparatory to replanting is expensive work, as it means stubbing up the old stools. That would be the best plan, however, as it would thoroughly clear the ground and leave it fit for planting, and few soils are in better condition for sowing or planting with timber trees than such as have been long cropped by coppice, as the surface of the ground consists of a deep rich layer of vegetable mould, and is often quite free from any kind of vegetation likely to interfere with young forest trees. In old coppice the

stools are often so rotten that they would not be difficult to knock over level with the ground, and if these with their tops were burnt, the ground would soon be cleared for planting; while the future growths from old weak stumps could be kept down easily till the young trees grew up. So unsalable is the underwood on some estates that owners would burn it as it stands, if they dared, in order to clear the ground. In cases where the crop has not been cut for a good while, Alder and Birch have attained to the dimensions of pit-prop—such clean samples of the kind as I ever saw, and for these, in the south-west of England, a very considerable market has been found in the Somerset and W.-H. coal-pits, 20s. to 22s. being got per ton at the pits. It is the practice there to sell the timber by weight on the weigh-bridge, and when it is cut and sent off green a ton goes into little bulk, the wood being heavy. In Yorkshire a ton is taken as equal to 40 cubic feet, wet or dry. *J. Simpson.*

NEW OR NOTEWORTHY PLANTS.

BEGONIA FORGETIANA.*

This is a pretty species, similar to *B. undulata*, figured in the *Botanical Magazine*, plate 2723, but decidedly of a more ornamental character. It is a native of the province of Rio Janeiro, Brazil, where it was discovered by Mr. L. Forget, who was travelling for Messrs. Sander of St. Albans, and sent it home in 1898. The original plant is lush in habit, having about a dozen stems, the tallest nearly 2 feet high, and more or less branched. It is almost glabrous throughout, and somewhat fleshy, and the internodes are shorter than the leaves, and at first completely enveloped by the membranous stipules. Leaves fleshy, in two rows, obliquely lanceolate, the largest between 6 and 7 inches long and 2 inches broad, semi-cordate at the base, tapering to the top, margin wavy and curled, with a few very small teeth, glabrous on both surfaces, except a few bristles along the midrib on the under surface, glaucous above. Flowers pink and white, about an inch in diameter, borne in axillary clusters, equalling or overtopping the leaves; male and female usually intermixed. The flower-buds are at first enveloped by large, pale, membranous bracts, similar to the stipules.

In a genus so rich in beautiful species it is difficult to appraise the ornamental value of any given one, but *B. Forgetiana*, although not one of the showiest, is very pretty, even when not in flower. It is of elegant habit, and the glossy green leaves, and large sheathing stipules, render it decidedly attractive. *W. Botting Hemley.*

* *Begonia Forgetiana*, Henstley, sp. n.—Suffrutex vel herba subcarnosa, lere omnino glabra, a basi ramosa, creberr. bipedalis, ramis rectis rubescentibus, internodiis annatis foliis brevioribus primario stipulis membranaceis simplicibus vagantibus, vestitis. Folia carnosa, disticha, subpetiol. brevissim. petiolata, leviter oblique lanceolata, in ramulis florigeris usque ad 7 ped. longa et 1½–2 ped. lata, basi semiobcordata, apice acuminate sed vix acuta, margine undulata vel primario em-pato-undulata et remote denticulata, nervis glaberrima, supra glauca, subtus scens costam perspicua. Pedicelli axillares, rubri, folia squantes vel superantes, pauciflori, monomeri vel multicaules, pedicellis creberr. semipetiolariis. Bractee spatul. acce, bracteolae stipulis simillime, flores omnino vestite, cito decidue. Flores roseo-albi, creberr. 1 ped. diametro. Perianthium segmenta 4 cum supero in fl. fem. 3, exteriora late ovata, interiora minor, angustiora, in fl. masculo 4, linearia. Stamina circa 20, filamentis brevissimis. Capsula trilobulari, imbricatis lobata, placentis integris, stylis 3, lobis lobatis. *W. B. H.*

SOBRALIA RUCKERI.

OUR illustration represents a flower of a very fine and richly coloured *Sobralia*, shown by Sir Trevor Lawrence, Bart. (gr., Mr. W. H. White), under the above name at the meeting of the Royal Horticultural Society, May 7 last, when it was accorded an Award of Merit. It is much dwarfer than *Sobralia macrantha*, and bears smaller but better-formed and more richly coloured flowers than those of that species, the substance of the flowers also being finer. The species is rendered somewhat difficult to decide by the name erroneously appearing to other species in some botanical works, notably in the case of the plant figured in *Venit. Oech.*, l. t. 42, which has been referred to *S. rosea*.

The name appears in the catalogue of the fine collection of G. W. Schiller, of Hamburg, 1857, and it was in Mr. Rucker's collection; but how these plants would compare with the species here illustrated (fig. 23) it is not possible to say.

In any case, the plant in Sir Trevor Lawrence's collection is a very fine and distinct flower, differing from any of the large number of species in whose company it is now growing. The sepals and petals are pale rose-purple; lip white at the base, and with a conspicuous dark yellow plate running up the centre; front of the lip dark rose-purple.

LILIES AND THEIR CULTURE.

(Continued from p. 12.)

THE ELEGANS AND UMBELLATUM TYPES.—These are very hardy plants, of dwarf stature, producing erect, cup-shaped flowers, either solitary, or in umbels of several, coloured some shade of yellow or red, or both. Their bulbs are below the average size, and are generally compound, i.e., they have several crowns each, and produce a corresponding number of flower-stems. They like a warm situation and a well-tilled soil, especially around and above the bulbs, for these plants produce stem roots which can be encouraged to form perfect masses, thus adding to the strength of the flower-stems, and helping to preserve the bulbs from undue stress. As pot plants they are very useful, and the plants flower without fail under ordinary treatment the same season in which they are planted; they force well early in the year. They may be grown in a small pot, planting as many bulbs in each pot as will cover the surface of the soil in the case of the elegans group, and three bulbs to a 6-inch pot in the case of umbellatum. The elegans group make excellent pot-plants for table decoration, or for the decoration of apartments generally; their flowers are of a rich colour, they last a week in good condition, and their odour is not so pronounced as in many forms—in some cases it is entirely absent. As border plants they are invaluable for grouping in the foreground of taller plants; they are also effectively planted in beds in association with a few ornamental grasses, or some such light-foliaged plants, which would help to break up the flat sheet of colour. These Lilies should be planted in a light soil as soon as procurable, but in heavy, wet soils planting had better be deferred till spring. The bulbs should be planted 4 inches deep and 4 inches apart; their stems will then cover the ground and keep it moist, so that the stem-roots may be encouraged. Lilies of the umbellatum group should be planted 6 or 8 inches apart, these growing to twice the size of *L. elegans*, and their inflorescences are also much more branched.

Lilium elegans embraces some twenty garden forms, all showing distinctive characters both in growth, leaf, and flower. I have only space here to mention the best of them; Prince of Orange is a dwarf, early-flowering plant, a foot high, each stem bearing three or four flowers of a rich orange colour, spotted in the lower half with linear crimson spots. The anthers contain coffee-coloured pollen, and the stigmas are tinted a similar colour; it makes a capital bedder. *Alutaceum* opens its flowers a week later; they span 6 inches across, are of elegant shape, and are coloured orange-red, shading to a rich apricot at the apices of the petals, and a rich yellow at the middle, the basal half being covered with linear crimson spots, these being smallest near the claw. The outside of the flower is flushed a silvery-orange. Both this and Prince of Orange have large, glabrous buds. Van Houttei is a taller plant, with rich sanguineous-red flowers, the outside being feathered and flecked buff or pale crimson; the filaments and styles are crimson-tinted, and the lower half of each petal is markedly ridged, the ridges terminating in a few black-crimson spots on raised processes resembling hairs; the buds are green and glabrescent. *Atro-sanguineum* has darker flowers than Van Houttei, heavily spotted on the inside the lower two-thirds of their depth, the apical third alone being free from spots; a very rich-coloured, popular variety.

Marmoratum aureum has two or three-flowered stems 1½ ft. high. The buds and young growth are covered with a woolly tomentum, which is retained on the stem, leaves, and on the outside of the flower till they ultimately wither. The flowers are very full, of an orange-yellow tint, occasionally flushed with red; the whole flower is heavily spotted blood-red, save for the extreme tips of the petals. The middle of the flower is markedly ridged, the ridges aggregating into a median process at the base of each petal, entirely covered with a multitude of whitish hairs; it is one of the best of the elegans group.

Semi-plenum is a rare form, two or three-flowered, the bud and young stem being covered with loose tomentum. The flower resembles Van Houttei in colour, shape, and spotting, but the filaments are shortened, and have lateral appendages, which form a mass of red petaloid growths in the centre of the flower. The upper half of these petaloid filaments and the anthers (which do not contain pollen) are coloured white or pale rose, giving the flower a bright yet singular appearance.

Orange Queen is a grand new form, with large flowers of a rich orange tint, shading to apricot at the margins of the petals. The petals are very stout and broad, spoon-shaped, with emarginate apices, which give the flower a full, rounded appearance. The anthers are unusually large, and contain coffee-coloured pollen.

Alice Wilson is a similar plant, with flowers of a clear lemon-yellow colour, shading to a soft apricot as the flower ages. These two forms represent the cream of the elegans group.

Lilies of the UMBELLATUM group are rather better known, few gardens being without a few representatives. The three best reds are incomparable, a very free-flowering plant, with splendid flowers of glowing red; grandiflorum, a similar plant, with orange and red flowers of larger size; and erectum, a form in which the flowers are red, flushed with yellow in the basal half. Of good yellows, Cloth of Gold is best, it bears grand flowers of old gold colour,

six or seven on each spike: *Tottenhamense* is another good yellow-flowered form, the flowers being slightly spotted red; *Aurantiacum* has orange-yellow flowers, shading to red as the flower ages. These three yellow forms are supposed hybrids between *elegans*, a good species, and *umbellatum* forms—these latter, a race of Lilies of garden origin, probably derived from *L. bulbiferum* or *L. davuricum*, or both. *Lilium croceum*, a well-known border plant,

which I suppose they must belong, as they are listed as varieties of *L. elegans* in the Kew hand-lists. Both plants attain a height of from 2 to 4 feet, and bear several flowers on each stem. These flowers are about midway between the *elegans* and *Martagon* types in shape, in that the petals are more reflexed than in *L. elegans*, but not to the extent of the turbinate flowers of *L. Martagon*. *Lilium Batemanie* has lovely, rich apricot

A MIDLAND GARDEN.

I HAVE been measuring the height of some of my taller trees by their shadows, and find that the figures given previously (*Gardeners' Chronicle*, November 24, 1900) were too small. They were only estimates by the eye. The Lombardy Poplar is 65 feet instead of 50 feet, and the Tulip-tree is 32 feet instead of 25 feet. The measurement by shadow is easily accom-



FIG. 23.—SOBRALIA RUCKERI. (SEE P. 60.)

with large spikes of orange coloured, heavily spotted flowers; and *L. bulbiferum*, a smaller-growing plant, with rich orange and scarlet flowers produced early in June, practically complete the list of early-flowering types which thrive together.

Two other fine Lilies, which, though known long ago, are not nearly so much grown as their beauty would warrant, are *Lilium Batemanie* and *L. Wallacei*. Both are late flowering plants, requiring a rather moist soil in a sheltered spot, as they are likely to dry out when planted with the *elegans* group, to

coloured flowers; those of *L. Wallacei* are coloured orange-red, and are copiously spotted with purple. They are excellent bedding plants, and are useful for planting in the front of *L. auratum* and other tall-growing Lilies. They do not force well, being more or less moisture-loving, and resenting heat; nor are they likely to be wanted as forced plants, for many dozens of Lilies flower naturally in advance of these. Their affinity with *Lilium elegans* will not be very apparent to cultivators of these plants. *G. B. Mallott.*

(To be continued.)

plished whenever the shadow is clearly defined on a flat surface. Take a stick of measured length, say 3 feet, set it upright, and measure its shadow. Suppose the shadow is 1 foot; then measure the shadow of the tree. If it is 80 feet, a simple rule-of-three sum will show that the tree is 60 feet high.

Some persons imagine that the garden Bluebell is the same as the wild one, only altered a little by cultivation. This is not so. They are distinct species. The wild form, with which all our midland woods are painted blue in the month of May, has the flower-spikes

drooping at the tip, the perianth segments strongly recurved, and the leaves rarely more than $\frac{1}{2}$ inch wide. This woodland beauty has never held the same scientific name for more than a generation or two. It has been tossed about by the botanists like a shuttlecock between *Agraphis*, *Hyacinthus*, and *Scilla*, and has at last found rest, it is to be hoped, as *Scilla festalis*. The garden form, of which the flower-spikes are always upright, not drooping, and the leaves wider, is *Scilla hispanica*, a native of Spain. I have both forms growing together, and some that look like hybrids, having intermediate characters. Also a single plant of a very fine pure white form, with leaves $1\frac{1}{2}$ inch wide, and very large flower-spikes.

Bulbous-rooted plants supply many of our most beautiful spring flowers, but they are troublesome things in the garden. Most of the smaller bulbs are best left undisturbed in the ground for several years, but after the flowers are over the leaves remain for a long time, and have a very untidy appearance, just when you want to plant out the summer things and clean up the beds. To cut them off injures the bulb. To tie them into bunches is not much improvement. I know of no means of getting over the difficulty. I have planted out the *Pelargoniums*, &c., disregarding the bulbs as much as possible, and as soon as the leaves are yellow they will be pulled off. One of the most untidy of them all is the Star of Bethlehem, *Ornithogalum umbellatum*. It is pretty, but it only opens while the sun shines, and it has a terrible number of leaves.

The rhyme of the Oak and the Ash has many forms, here is one of them:—

“If the Oak is in leaf before the Ash,
You'll maybe get nought but a bit of a splash;

If the Ash is in leaf before the Oak,
Look out, my lads, for a jolly good soak.”

This last spring the Oaks in this district were clothed with their yellow-green foliage long before the Ash woke up at all. We ought therefore to expect a dry season. But I have very little faith in that dictum. My belief is that the Oak is always before the Ash. I have taken notice of the point for many years, and though I have made no records I do not remember ever to have seen the Ash in leaf first. The Ash is about the latest of the woodland trees to put out its leaves, and the first to drop them in the autumn. Rural wisdom is not always to be trusted. I was once told by an intelligent old countryman that Elm-trees were never struck by lightning, but I have seen several with the bark ripped down from top to bottom, evidently by lightning.

I have not yet arrived at any conclusions with respect to the twist sometimes observable in tree-trunks. More observations are wanted on this subject. A friend who has lately been staying in the New Forest tells me that he could find no such twisted trunks there, which is a remarkable fact if correct. In the grounds at Frogmore, there is a good example of it in the trunk of an evergreen Oak opposite the “Queen's Tea Room.” I lately visited the park at Rothley Temple in this county, and observed four distinct cases of twist, viz., a Wych Elm, a Turkish Oak, and a Sycamore, all from left to right; and a common Oak, from right to left. The tree which shows it most frequently is the Horse-Chestnut, and always from left to right.

Not a single caterpillar of any kind has appeared on my Gooseberry-bushes this year. All the leaves are sound and healthy, and the crop is a heavy one. I have counted fifteen large berries on an 8-inch spray.

The entire absence of grub is remarkable.

If there are no grubs this year, where are next year's flies to come from? The saw-fly is not extinct. I have seen its caterpillars in a garden 2 miles distant. Probably the chrysalids under my trees did not develop into flies this year, but, remaining in the ground, will develop next season, when I shall see enough of them.

I do not know whether the brown-leaved *Prunus Pissardi* has ever ripened its fruit in this country. Its rather recent introduction has hardly given time for much experience of its capabilities, and as it comes from the warmer climate of Persia, it would not be safe to prophesy. I have just found under the tree on my lawn a fully formed but unripe fruit, of a deep red colour all over, about the size of a boy's marble, only oval instead of globular. I cannot see any more such on the tree, but this exactly corresponds to the descriptions of the fruit of *P. Pissardi*. That it should be dropped in an unripe state seems to indicate that it would not ripen.

We have a fine crop of Strawberries this year, but as soon as they began to ripen they disappeared mysteriously; and for the first week we were not able to gather any for our own use, the blackbirds and thrushes had them all. To these sweet songsters we do not mind paying a fair price for their music, but it is possible to pay too dearly even for a blackbird's whistle, and as these depredators will not content themselves with a share, we have had to shut them out altogether by netting the bed all over. But this involves the trouble of lifting of the net whenever you want a Strawberry. It is a good plan to fix a stout stake in the middle of the bed and fasten the centre of the net to this. The edges can then be pulled tight in all directions. Good strong netting may be bought for about a penny a square yard. For the protection of seeds I have found the following “scare” effective, and I shall try it next year for the Strawberries:—

Get two stakes about 4 feet long, and stick them into the ground at about 6 inches apart, and sloping at about 15°. From one of these hang by the neck a glass bottle of any sort, and from the other a good sized piece of broken window glass; every breeze makes these two clink together, and the sound frightens away the birds. *F. T. Mott, F.R.G.S., Birstal Hill, Leicester.*

(To be continued.)

STRAWBERRIES IN 1901 AT MAIDSTONE.

THE blossoming season was a very favourable one. In this district we had a fine rain in the first week of May, which gave the plants a good start. We began to pick from our open fields on June 15, being much later than usual; but the season generally has been nearly a month later than ordinary years for all crops. As regards Strawberries, this is unfortunate for our Kent growers, as they prefer to clear the yield before the Cherries ripen. The earliest to gather was Royal Sovereign, *Vicomtesse Hericart du Thury* being a few days later; but the former had a more sheltered position.

As far as garden varieties are concerned, the crop has been very satisfactory. Here and there a variety has not turned out so well as usual; but as we grow for the plants, and only fruit a portion of the two years' stools, it may be that those which failed were weakened by the strain thrown upon them in producing a heavy crop of runners. This was noticeable in British Queen, a variety for which there is always a strong demand.

The most remarkable feature in this year's culture has been the wonderful way the plants have stood the long drought and excessive heat; entirely because the land was deeply moved, and heavily manured for the new plantations. Late sorts have been exceptionally fine, because in mid-June we opened a trench with the spade between the rows, about 6 inches deep, by inserting the spade and working it to and fro, so as to form a V-shaped aperture, and in this we poured a liberal supply of liquid manure, raking down afterwards. Our beds being very wide between the rows, the liquid did not taint the straw round the plants. This enabled those treated to feel their rootlets at a critical dry period, and we commend this idea to growers, not that it is novel, but because it is more honoured in the breach than in the practice. As we write (July 15), the following are giving us fine fruit daily:—Waterloo (the black Strawberry); Laxton's Latest - of - All, immense berries, of the best flavour ever tasted in this sort; Elton Pine, Eleanor, Filbert Pine, enormous crop, rich flavour; Frogmore Late Pine, large fruit, of exquisite flavour; Newton Seedling, large supply for preserving; and Queen of Denmark, an enormous crop of highly flavoured, small berries.

Of the new autumnal kinds, *St. Antoine de Padoue* has produced fine globular fruit; but the best flavoured is *La Constante d'Antonne*, an improved *St. Joseph*. These three, with *Oregon*, are now blossoming again, and promise a fine yield up to the November frosts.

The July crop on the Alpines has been unusually good. Among the older kinds, *President* holds its own as one of the most reliable, and has been grand in flavour. *Vicomtesse H. de Thury* is as fine as ever, and its distinct, rich flavour is always appreciated, while for jam it is perhaps the best. *Stirling Castle* for all practical purposes is the same variety.

Dr. Hogg maintains its place as the richest-flavoured, and the next best is *Countess*; *British Queen* follows, and for flavour also *Queen of Denmark*.

The most noticeable has been the pink-fruited *Louis Gauthier*, justly admired by all visitors. The crop has been enormous; the whitish-pink fruit laid in handsome clusters all round the foliage, some berries being almost circular, and up to 2½ oz. in weight. The flavour is rich and refreshing, but the fruit is soft, and as such is only suitable for home use. It also fruits again in the autumn.

Sir Joseph Paxton has been very prolific, and having both autumn and spring-planted beds, the picking has lasted over a long period, the spring bed being ten days later in use than the other—a hint that growers might like to know; we refer to two-years' beds, as we do not keep any older than this.

The older varieties have kept their good characters; and among the newest ones we consider *Trafalgar* the most promising. We must have greater experience before we venture an opinion on other varieties. We might mention that *Edouard Lefort* is certainly an improvement on *La Grosse Suerce* for the earliest forcings.

In conversation with a London salesman, we learn that the market Strawberry crop has been an abundant one, but prices have ruled low, because the fruit has not reached buyers in first rate condition. There seems to be a tendency, possibly stimulated by the competition of the railways above London, to favour the consignments to distant places, to the prejudice of the bulk intended for London consumption. It is allowed to stand in the trucks at the collecting stations while the “foreign trucks” are despatched, often

for three or four hours in the broiling sun; this, added to the jolting to the station, takes the freshness off the fruit. Why do not the railways paint these fruit-trucks white (and also the meat-vans, this would be some advantage.

The fruit, generally, has been smaller than usual, but after the rain on the 18th of June, it was distinctly better, but naturally rather soft for travel. We hear the early crops near Southampton have been very large, 40,000 gallons leaving Swanwick station in one day. *George Empson & Co.*

TREES AND SHRUBS.

VIBURNUM OPULIS.

THIS truly beautiful deciduous shrub, a native of Britain and North America, is not grown nearly so much as it should be. To find it, and to enjoy it, we have to go out into the woods, the highways, and the byways, where it grows and luxuriates—often unscathed—in a wild state; the run being generally on

plant does not go out of flower so very quickly, as whilst some flowers are going off, others are coming on. There are two bushes of it in my grounds; one is 10 feet by 10 feet, but to form this, I should mention there appears to be more than one root-stock.

These plants, as regards root-feed, have to take pot-luck with some large Holly-bushes, which formerly formed part of a quickset-hedge. When the latter was grubbed up, the Hollies were left, and from under these, on the sunny side, the *Viburnums* grew and flourished.

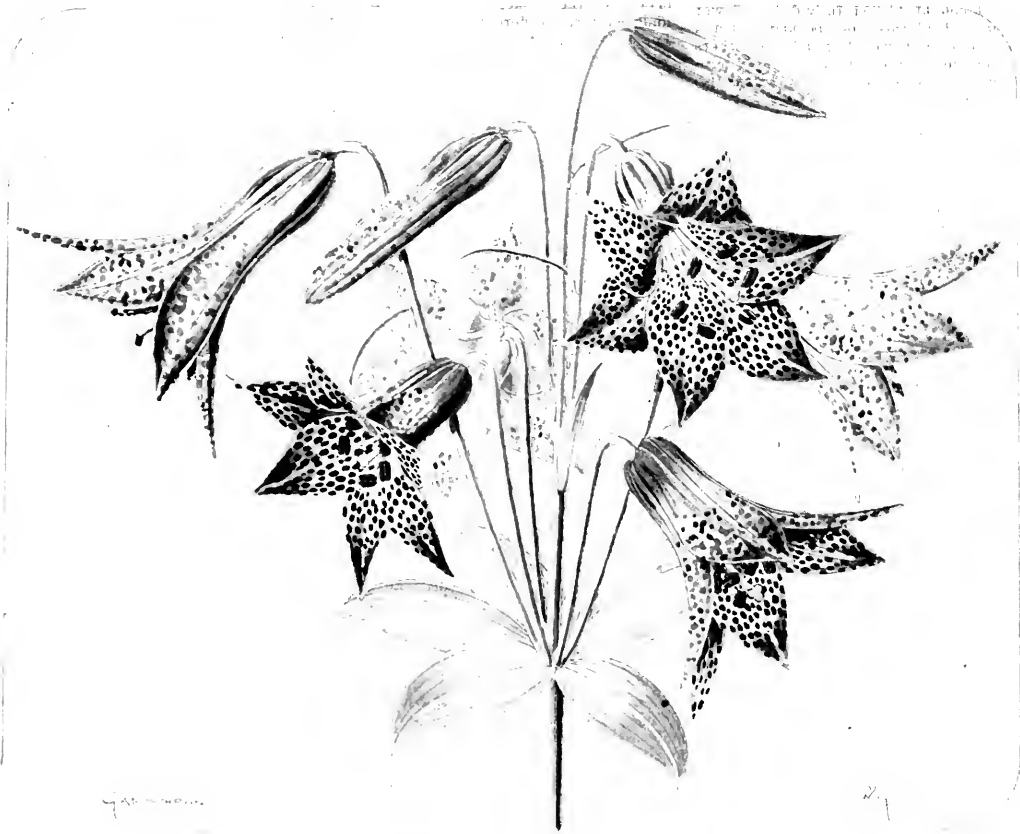


FIG. 21.—LILIUM GRAYI: FLOWERS REDDISH-CRIMSON.

LILIUM GRAYI (S. WATSON).

THIS is one of the newer Lilies shown by Messrs. Wallace at Chiswick on the occasion of the Lily Conference. It is evidently closely allied to *L. canadense*, but the flowers are more funnel-shaped, and the segments less recurved; the colour, too, which is probably variable, is more crimson than in *L. canadense*. Our illustration (fig. 21) is from a sketch taken at Chiswick for us by Mr. W. G. Smith. The plant is a native of the Alleghany Mountains of North Carolina, where it was originally discovered by Dr. Asa Gray in 1810, and found again by him in company with Prof. Sargent in 1879. It is quite hardy. For fuller botanical details we may refer to the *Botanical Magazine*, t. 7231.

V. sterile and *V. plicatum*, which, owing no doubt, to their large, globular blooms, are on that account more popular.

Let anyone give *V. Opulus* a fair trial on a well-prepared bed of, say, 10 feet diameter to begin with, of ordinarily brown loam; and the sooner to have the bed well furnished with plant and bloom, place thereon five plants, which in two or three years, less or more, will grow into one at least of the glories of the glade around. The scent is simply delicious—so much so, that neither the *V. sterile* or *V. plicatum* can, so far as sweet perfume goes, come near it. A handful of sprays in a bowl before me not only scents the room, but also permeates the whole house. The

Besides the above, I had almost omitted to mention the beautifully red, translucent berries and tinted leaves which are left to adorn the plant during the autumnal months, which have their naturally fading glories, in contradistinction to the revivifying glories of the spring. *W. Miller, Beckenwell.*

MAGNOLIA MACROPHYLLA.

MESSRS. J. Veitch & Sons have sent us a flower of this noble tree. The leaves measure about 15 inches by 8 inches in width, with a leaf-stalk of 3 inches. In form the leaf-blade is oblanceolate, with two rounded lobes at the base, and with an acute apex. The upper surface is green, the lower face

lancous. The flowers are 6 to 8 inches across, petals leathery, creamy-white, with a deep purple blotch at the base. *M. macrophylla* occurs about the base of the Southern Alleghany Mountains from N. Carolina to Florida, inhabiting, according to Sargent, sheltered valleys in deep rich soil, protected from wind by forests of swamp Chestnut, Oaks, Gums, Hickories, and Dogwoods. It generally grows in isolated groups of a few individuals. It is by no means so generally cultivated as its merits demand. *M. T. M.*

CARPENTERIA CALIFORNICA PLENA.

I have found an almost fully double flower on my big bush of this most beautiful shrub. It was the only flower left, all the others which this year were rather sparingly produced, having fallen some time ago. It was also the only flower on the end of the shoot, though they are usually produced in threes. I shall be glad to hear if any of your shrub-loving readers have ever noticed a double flower on this shrub.

DIMORPHANTHUS MANDSHURICUS ALBO-MARGINATUS.

This is quite one of the most evenly variegated and handsomest new hardy shrubs I have seen for some time. It originated from a sport of dimorphism occurring a few years ago in the garden of a Frenchman named Gonchault, and was at once propagated by grafting it on the roots of the ordinary green-leaved variety, which is, I believe, the largest leaved of our deciduous shrubs. It was distributed last year by M. Léon Chenault of Orleans, who exhibited a fine specimen of it at the Paris International Exhibition, where it was much admired, and was awarded the first prize as the best new hardy shrub of the year. My plant has now ten fine leaves, which are from 2 feet 6 inches to 2 feet 9 inches long by 2 feet across. They will doubtless attain a larger size when the plant is fully established, as the leaves of the type form often reach 3 feet. *W. E. Gumbleton.*

NOTES FROM THE CAUCASUS.

(Continued from p. 3.)

NURSERIES.—One of the principal of the few nurseries in the Caucasus is that which belongs to Mr. Nojev, in Alaskan. This nurseryman, besides other specialities such as cool Palms, which thrive in the open ground, has started bulb-growing, and had already (at the time of my visit in 1898) a large field of old and young bulbs of Tulips, Hyacinths, &c. Considering the great masses of bulbs which every year are imported into Russia, it is really a good plan for the Russians to try to grow their own bulbs, when they have within their own boundaries a climate suitable for the purpose. It is important to find out places fit for such cultivation without entailing large expense. If the land is too low it is often too moist, and causes the bulbs to rot. If, again, the ground is too heavy, sand will have to be carted on to it, which is very expensive, especially if the land is situated at a distance from the sea.

To give an idea of other parts of South Russia, I will just say a few words about the climate in Charkow. When this is compared with that of the above-mentioned part of the Caucasus, a great difference is found. Although this town is at about the same latitude as Paris, we usually get the first frost in the middle of September, but severer frosts seldom set in before the end of October. In winter the temperature often sinks 15° to

20° Réaumur. Occasionally in some years it may fall to 25°, or even more. In March the weather gets milder, and in April the real spring begins. This is very short, and the warm weather often sets in all at once.

I have known years when one week had north wind, and from 10° to 15° R. of cold, deep frozen ground, and much snow; the next week a south wind, and 15° to 20° R., with bright, warm sunshine, which in a few days melted the snow, thawed the ground, and everything turned green in no time. Such a climate makes much difference to the work in a garden, when everything must be done at once after the ground has laid frozen all the long winter. Different, for instance, from England, where it is often possible to work in the garden nearly all the winter, and although, as I mentioned before, this part of Russia lies further south than Paris, yet most of the best foliage and ornamental trees cannot stand the climate. The reasons for this are principally three, viz., drought, cold, and sudden changes. Summers with little rain or humidity in the air, scorching sun, and strong, dry winds across the large and bare plains, dry the ground up to a great depth, fostering many insects, such as greenfly and others; then comes the winter with severe cold, often before any snow has fallen, and the ground is frozen to a great depth, and the trees have their stems and branches withered.

Sudden changes injure many plants severely, and we often in February and March have hard frosts in the night, and in the day a very clear dark blue sky with bright sun. It may be from 10° to 15° or 20° R. before the sun rises, but only a few hours after, the thermometer, if hung in the sun, may register from 10° to 15° or more above freezing. This causes the bark of the trees to crack in all directions, from the ground right up and along the branches to the crowns. In this way many different trees are spoiled or killed; for instance, choice varieties of Ulmus, Acer, Tilia, Esulus Hippocastanum, and others, not to mention the tender and finer sorts of fruit-trees, especially Pears, on which the bloom-buds turn black wholesale as soon as the severe winter comes, and even the young branches turn black and are killed. Populus and Salix are trees much used for planting in the streets for shelter. Evergreen Conifers, such as Thuja, Cyprresses, and others, suffer much in spring from the sun, frost, and drying winds. Choice varieties of bluish-grey Picea, such as *P. Paryana* or *P. pungens*, Engelmanni, concolor, and *Abies anabilis*, grow very well, especially if given plenty of water in summer. *A. K. Andersson.*

PENICUICK.

This fine Middlethian estate came into the possession of the Clerks some 250 years ago, the present representative of the family and owner of the property being Sir Geo. D. Clerk, Bart. It is extensively wooded, the river Esk making its noisy way through the grounds or down deep glens, the steep, sloping banks of which are clothed with thinly planted trees, which again in some portions, mainly near the house, spring from an undergrowth of Rhododendrons, great masses of these coming within range of the vision from many points of vantage. Much of the older wood is Beech, than which in early May there is no tree with foliage quite so tenderly green, nor so lace-like as in its half-expanded state it shimmers in the sunlight or dances at the passing of the slightest breeze. The Silver Fir is another of the original trees; these, with the Beeches, are also not far distant from the house. Many handsome

specimens lie recumbent, laid low by a fierce gale of the past winter. It was sad to see these otherwise fine trees affected with rot, though their age cannot extend beyond 150 to 170 years at most.

The house, which unfortunately was gutted by fire at a recent date, is delightfully seated on a nearly level lawn, with the easiest slope to the east, while to the west the ground slopes rapidly downwards, forming a vast natural amphitheatre lying in a hollow, with the Esk winding in a curve in the distance; and nearer the spectator a lake of some extent cuddling the base of the half-hidden slope. Down here, also, the old gardens are situated, the river flowing close past them. At one time these were somewhat famous, and Loudon mentions the glass erections, early in last century, as being extensive. The walls are low, and arranged with an absence of mathematical precision that appeals to the present-day observer as remarkable. One of the most noted gardeners connected with this old garden is Mr. Henry Eckford, of Sweet Pea fame, who some fifty years ago served his apprenticeship here to the calling he has since done so much to adorn and to advance.

Mr. Buchanan, who manages this large estate, reminded me, when walking round the policies, of another famous Scotsman who has still a visible connection with Penicuick, in the form of an obelisk erected to his memory by the third baronet. This was Allan Ramsay, of Edinburgh, periwig-maker, bookseller, dramatist, and poet, the forerunner of Ferguson and of Burns, and whose characteristic Scottish dialect still appeals to a numerous body of readers. Ramsay and Sir John Clerk, the second baronet, himself a poet and a man of most liberal views, were fast friends, and not unnaturally the "fam'd and celebrated Allan" spent much of his leisure time at Penicuick. Ramsay was in some things in advance of his day, and objected to herbs and roots being exposed for sale on the streets "on stalls unclean." He seems, also, to have dreamt of the North Loch being improved and the grounds in its vicinity adorned with flowers and trees. He, too, incidentally mentions Apricots and Peaches as having been cultivated in his day on walls, but not Grapes.

Returning to the more immediate subject of these notes, an enclosed American garden, near another lake of large extent, bears evidence of the dampness of the climate, many of the deciduous plants being covered with moss. Here are some large and healthy bushes of *Andromeda floribunda*, not so very long ago admitted to greenhouses as too tender to exist out-of-doors in Scotland. The plants flower here profusely, but the racemes are naturally much smaller than one sees them growing in England. Here, too, are some large specimens of Himalayan Rhododendrons, raised some fifty years ago from seeds sent from India by Lord Dalhousie. Spring frosts are inimical to the development of the flowers, otherwise the high position and cold climate do not affect the plants injuriously.

New gardens were formed about thirty years ago, and are situated near the house, but on a slightly higher level. The ground is naturally cold, and vegetation in spring is late. The appointments of the garden are all of a high-class order, the fruit-walls being constructed of bricks of a special manufacture, and built hollow, to ensure dryness and warmth. It is disappointing, therefore, to find south walls devoted to the culture of Plums, and culinary Apples established on others. Possibly the old gardeners, who laid out their gardens in sheltered, low-lying positions near streams, were wiser in their generation than we some-

PLANT NOTES.

SCOLOPENDRIUM VULGARE DAVIESII.

The lovers of Ferns may be pleased to hear that another discovery of a variety of *Scolopendrium vulgare*, with toothed margins, and with lines on each side of the frond from the base to the point of the frond. Some of the fronds are multipidennium, &c., and as far as it is are unrecognised in the *Scolopendrium* class. I wish to claim its name through your columns,

together by Prof. Sargent to inaugurate the building. The numerous photographs sent us all give the impression of a vault-like structure, but we are assured that ventilation and light are well cared for. The cost of the building was 285,000 dollars, to which has to be added the cost of the land, 225,000 dollars. The main exhibition hall is 122 feet x 50 feet, and 15 feet in height. If the Boston Society can do this with a membership of a thousand fellows, we ought to be able to do at least six times as well.

times are, who condemn their views as unsound.

In the glasshouses Mr. Angus, who controls the garden, has a lot of very fine Mignonette in full flower; and in another structure, and very appropriately, a quantity of Eckford's Sweet Peas flowering in pots. In one of the fruit-houses trial is being made of Strawberries planted out in borders instead of in pots for early fruiting.

Mr. Angus speaks very highly of the good points of an American-cultivator employed in

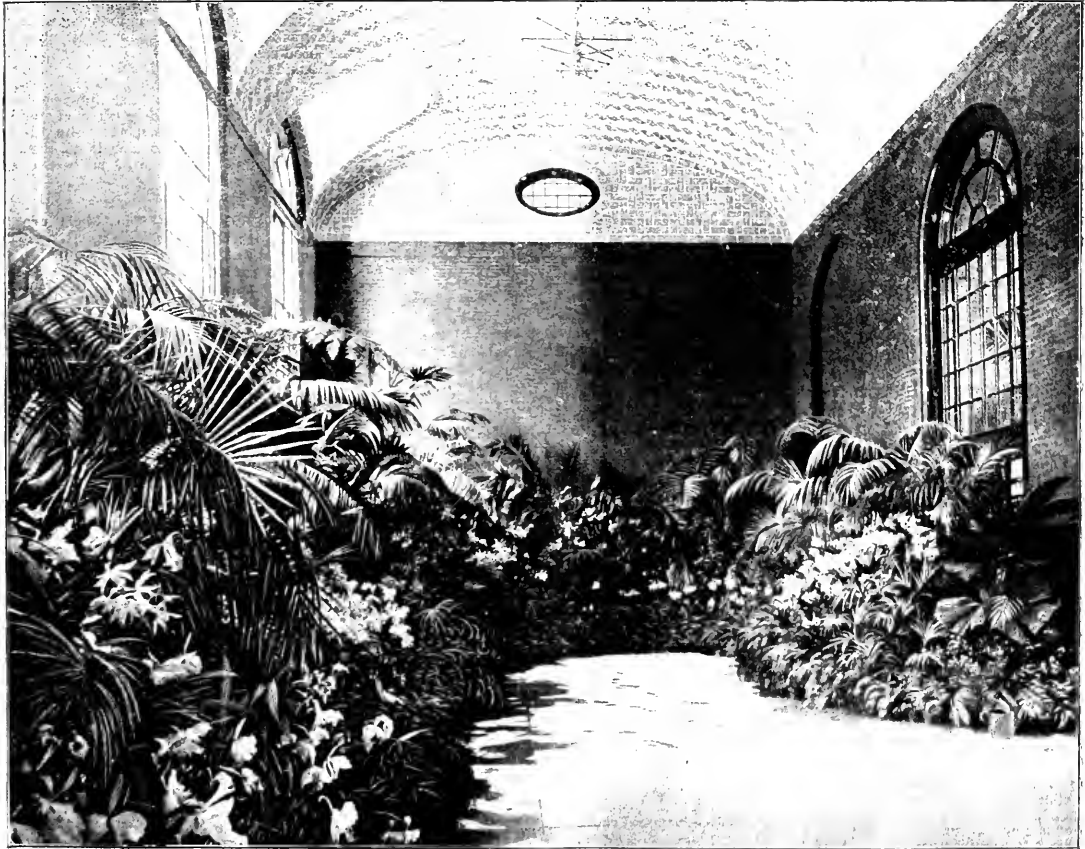


FIG. 25.—A PORTION OF THE ORCHID EXHIBIT IN THE NEW HORTICULTURAL HALL, BOSTON, U.S.A.

the kitchen garden quarters, as a hoe mainly. For efficiency combined with rapidity of action it appears to occupy the same position with regard to the Dutch-hoe that the lawn-mower does to the scythe.

I shall just add, that one of the nicest pergolas is in course of construction as a covered way to the entrance of the building which at present is doing duty as a dwelling instead of the ruined house. Roses apparently are being largely depended on to furnish clothing to it, and alongside one of its flanks a little garden of Roses has been arranged. B.

Scolopendrium vulgare marginatum, were found in the county of Green, D. Myrdlin Davies, *Bryoniae*, July 16, 1901.

**THE HORTICULTURAL HALL,
BOSTON, U.S.A.**

We have on several occasions lately, alluded to the spacious hall erected in Boston for the Horticultural Society of Massachusetts. We have done so with the view of stimulating our fellow countrymen to follow the example set by our transatlantic brethren. We have also referred to the magnificent exhibition got

TOMATOS FOR WINTER USE.

With abundance of fruit at the present time, it may seem out of place to call attention to future supplies. Still, the gardener is obliged to take time by the forelock, and to begin to prepare in July or early in August. In the earlier stages, winter Tomato plants cost but little labour to grow them, a cold frame sufficing for their needs, and after being potted or planted out, no forcing is necessary till November and December, and then only sufficient heat is needed to develop the fruit.

The chief point is to obtain a heavy set of fruit early in October. My practice is to sow

in July, and repot the plants till they reach 8-inch pots—the final potting. The plants are accommodated and fruited in low-roofed pits, of which the sashes are left open at night, indeed, are entirely removed in fine weather to get a sturdy growth, no warmth being applied till the date named. I prefer pots to planting out, the growth being more compact, and the set better. As a potting soil, good turfy loam and some bone-meal are employed, and this is rammed into the pots, ample space being accorded for holding water. Larger pots than 8 inches may be used, but much will depend upon the growth of the variety. Smooth, handsome Tomatoes of the Perfection type are not the best for winter-fruiting, as they do not set freely, the ribbed kinds being better; moreover, the flavour of the ribbed fruit is equal to the other.

I used to grow Conqueror for winter fruiting—a good-flavoured, prolific variety; also Frogmore Selected, which is a good setter, and of middle size and shapely. Sown now, this variety will give a full crop at Christmas. During last winter I gave Sutton's Winter Beauty a trial, and was satisfied that it is a good grower at that season, and a heavy bearer, and the fruits of good size and flavour. It is the best late-setting variety that I know of; and it is equally adapted for early spring, as is likewise Early Beauty. *G. Wythes.*

The Week's Work.

THE KITCHEN GARDEN.

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

Potatoes.—The earlier varieties should now be lifted, the good shapely tubers selected as sets, and stored in a cool, fairly light place; and those for consumption placed thinly in a dark root-store or cellar. If the tubers of these early varieties are left in the soil and much rain fall, they would sprout, and in consequence be greatly impaired in quality. After clearing away the rubbish, apply a light dressing of quick-lime or of soot to the land, and dig it one spit deep.

Turnips.—Potato-land is very suitable for Turnips, and a good breadth may now be sown, after trampling the ground to give it firmness, and raking it to an even surface. Sow in shallow drills drawn at 15 inches apart, which moisten a few hours before sowing. Having sown the seed, rake the land to cover it in, roll lightly or trample it again, and finish off with another raking. Thin the advancing successions after affording water in order to soften the earth.

Spinach.—A sowing may now be made without there being so much fear that it will run to seed, the ground being prepared for this vegetable as for Turnips.

Applying Water to Crops.—On light soils, Peas, Beans, Lettuce, Celery, Turnips, Cauliflower, and Broccoli, all need much water if vegetables of good quality are expected; and if to these applications of water, liquid-manure in a weak state can be added, the results will be still better. Where mulching is practised, the litter should be pulled aside before water is applied, and be replaced afterwards, or a little fresh soil may be pulled over the watered ground so as to conserve the moisture.

Globe Artichokes.—As soon as all the heads are cut, remove the stalks close down to the ground-level, and apply plenty of water, and a mulching of rich dung.

Work in General.—Clear off exhausted crops of all kinds, and prepare the ground for planting and sowing. Gather Beans and Vegetable-Marrows, and keep the hoe plied among the various crops wherever possible. Sowings may be made weekly of Radish and Mustard and of Cresses in variety on a north border.

THE ORCHID HOUSES.

By H. J. CHAYMAN, Gardener to R. I. MEASTERS, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Repotting.—The repotting season, excepting for a few species of Orchids, may be considered closed, and no plant should be disturbed unless there is an absolute necessity so to do, and I would advise that in all cases repotting be deferred till the beginning of September. The chief work meanwhile will consist in cleansing the plants.

Cleansing the plants.—The leaves of *Cattleya labiata autumnalis* are expanding, and the flower-sheaths pushing up. It will generally be found that after this plant has been imported about two seasons, it becomes infested by a small white scale insect, commonly found on the young developing growth inside the leaves, even before these expand. It is desirable that these pests should be removed without delay. This operation requires care, as the leaves when young are easily scratched, and thus permanently disfigured. If the scale be not removed quickly, they give a spotted and unsightly appearance to the leaves, and the creatures increase so rapidly that other plants in the house quickly become infested. A weak mixture of soft soap and rain-water is a good solvent and safe means of removal. It should be applied with a sponge.

Cymbidiums, if grown with the *Cattleyas*, or in a dry, airy house, should be kept under observation, red-spider soon infesting them in warm, dry weather. If any traces of this acrid be noticed on the leaves, the latter should be sponged, and their undersides often syringed. This is best done early in the day, and when outside conditions are favourable. The pseudo-bulbs are equally liable to be infested by scale, which are found on the inside of the old leaf bracts. *Masdevallia Chimera*, and those of that section, whose new leaves are now appearing, are likewise liable to be attacked by red-spider in hot weather, and it is well to stand the plants on the floor of a house and syringe them once daily for several weeks, and afford air by the lower ventilators, shading the plants heavily during the brightest hours.

Seedlings.—The raising of seedlings has required much more attention this year than usual. The cold drying winds prevalent in the spring, having delayed germination for a long period of time, and the weather of late has been so warm and dry, that it was a difficult matter to keep the surface of the seed-pans in a desirably moist condition; and when the seeds have at length germinated, they have not made rapid progress. This, of course, is my experience here, situated as I am with dry brick walls closely surrounding me. I have never had Orchid-seed to germinate more freely than this year, but the progress of the seedlings has been very slow. The seedlings of *Dendrobium* are the only ones which have grown a pace. Seedlings older than one year have made good progress, and in many cases the plants will require to be repotted soon. The plants which have become well rooted, must not be allowed to remain in a dry state for any length of time; and the cultivator should examine his plants twice daily in very warm bright weather. Guard against any excess of moisture at the roots during dull weather.

THE HARDY FRUIT GARDEN.

By G. HEIGER.

Cleansing the Strawberry Quarter.—The drought has almost brought the Strawberry season to an end, and the fruiting of all early and mid-season varieties is finished. The plants should now have the dead and exhausted foliage removed, together with the runners which have formed, if these be not required for increasing the stock of any variety. Remove also the mulching materials, then slightly hoe the alleys, and afford a light top-dressing of spent Mushroom-bed or hot-bed materials, afterwards applying water copiously. Any beds

older than three years, unless there are good reasons for retaining them, should be cleared away, and the ground utilised for some other crop. Where plants that have been forced are planted out, they should not be left to carry fruit for a longer period than two years. Not much being gained by summer digging land in times of drought, but rather injury is done by dissipating what little moisture is found in the soil, it will be found quite suitable without digging or manuring for Broccoli, Kale, Savoys, &c. Falling heavy rain to soften the soil, it may be necessary to use a crow-bar in making holes for the plants. The plants necessary for forming new Strawberry quarters should be layered forthwith into 3-inch pots, if it has not been performed previously. It is always advisable to plant one or two new quarters annually, as from these younger plants the earliest and best fruit is obtained. These rooted runners should be ready to plant before the middle of August, if fruit be expected next year. The Hautbois Strawberry, whose peculiar flavour is much liked by some persons, should also be planted at an early date on a partially shaded border, at 18 by 12 inches apart. The runners must be taken from a bed that contains a mixture of male and female plants, the species being more truly dioecious than other garden Strawberries. *Ed.*

Fruit Protection.—The birds are more troublesome this year than usual, and Gooseberries and Currants will have to be protected by fish-netting, or very thin canvas. The latter affords a slight shade to the fruit, very welcome in this sunny time. Before the nets are put over the bushes, the longer shoots should be shortened to half their length. Where Gooseberry and Currant-bushes grow together in a square, it is an advantage to have the plantation permanently covered with wire-netting.

Insects.—American blight is much in evidence this hot year. In a Middlesex garden I noticed recently some old Apple-trees, the main stems of which were whitened over with this pest, and nothing apparently was being done, or any notice taken of it. A strong lather made with Gishurst's Compound Soap, applied with a stiff painter's brush, or a little methylated spirits carefully applied in the same way, will destroy all the aphides with which it comes in contact; but to eradicate this pest where very abundant on the trees, winter dressings are required, and these should be very thorough. Green and black aphids are destroyed by the quassa mixture, or the XL-All insecticide; but the former cannot be used where fruits are ripening, it being intensely bitter. Red-spider on Peach and other fruits may be kept in check by frequently syringing the trees with clear water with some force.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKER, Esq., Prestwold Hall, Loughborough.

Palms and Cycads.—Any of these, whether repotted lately or not, which are in full growth should be copiously syringed night and morning, and have weak manure-water or clarified soot-water frequently applied at the root. At this season, artificial heat is not needed by these plants, and it will suffice if the plants are syringed and the house closed about 4 o'clock, after a good dumping down of the floors, &c. It is an advantage when some of the inmates of the Palm-house proper can be placed, during their season of growth, in other glass-houses, as this will usually admit of affording those that remain and those that are placed elsewhere more space in which to develop their new leaves. Palms being liable to infestation by scale insects, should at this season receive a thorough cleansing with an insecticide, applied with a rather hard brush to the stems and ribs of the leaves, and with a soft rag to the tender parts of the leaves. A Palm is never thoroughly cleansed at one operation, but it should receive two or three

before being arranged in its proper place for the winter. The remedy for scale will be found in one of my former Calendars.

Ferns.—At this dry season, Ferns growing in baskets should be dipped in vessels of water twice a week. As the potted Ferns increase in size, let them be afforded plenty of space, so that their fronds may become firm and properly matured, as unless this be done, the dry air of the apartments in which they may have to stand will greatly injure the fronds. Now that growth is more or less complete, manure-water may be afforded at the rate of one of manure to twelve of water. The fronds of most species should now be approaching the mature stage, and these alone will remain in good condition in the winter; late-formed fronds, on the contrary, suffer from damp during the winter.

Camellias and Smilax.—Where these plants are grown on the walls of forcing-houses, the foliage must be kept in a clean condition by the use of the syringe, and the shoots regulated, thinned, and fastened in neatly. Smilax should be afforded a top-dressing of soil and manure, and the growths prevented from running into tangled masses.

Winter-flowering Stove Plants.—*Thyracanthus rutilans*, *Aphelandra aurantiaca* *Roezlii*, *Clerodendron fallax*, and *Eranthemum Andersonianum* may now be placed in the pots in which they will bloom, viz., 4 to 6-inch pots for the first two, and 8-inch ones for the others. The compost used should consist of mellow turfy loam, rotten stable-manure and leaf-mould, a small quantity of steamed bone-meal, and silver sand. The plants may be kept close for a week in an ordinary frame, being afforded shade in the brighter parts of the day, syringing them, and closing the frame from 3.30 to 4 P.M. When quite re-established, more air should be afforded, and the frame kept moist by wetting the coal-ash floor occasionally.

Propagation.—*Acalypha musaica*, *A. hispida*, and *Abutilon Sawitzii* may have the tops taken from plants that have become shabby, inserting these singly in small pots, and placing in a frame or pit having a bottom-heat of 75 to 80°, and in which moist conditions are maintained. In about a month enough roots will have been made to warrant a shift into larger pots.

THE FLOWER GARDEN.

By T. H. STADE, Gardener to Lord Portman, Portman Park, Exeter.

Evergreen Hedges.—Those consisting of Holly, Laurel, Thuas, Sweet Bay, *Juniperus virginiana*, *Phillyrea*, &c., should now receive their annual pruning, using the knife in the case of those with large leaves, especial care being taken to preserve a level face on the visible side. Depressions can be made up by leaving the shoots of greater length than elsewhere. As a rule for general observance, the plants of which a hedge consists should be cut in harder at the top than at the bottom.

Deciduous Hedges may be trimmed with the hedging-shears, and those consisting of *Rosess* or Sweet Briar should be trimmed more than once during the season. A China Rose hedge should have frequent attention, and after a large number of blooms have been cut or have faded, is a suitable time to regulate the growth and shape, as by carrying out the operation at various times a hedge does not present so stiff or shorn appearance, as is the case when closely trimmed at one time with a pair of shears.

Border Carnations.—The layering of the plants should not be delayed after the chief flush of bloom is past. Some gardeners have reserve plants in the vegetable or the reserve garden from which they take layers in preference to obtaining them from plants in the flower-garden or dressed border; and it is a good plan where it can be carried out. Before commencing to layer, scrape away the soil

around the plant in order to make space for some new compost, consisting of fine, sifted, sandy soil, sea-sand being used if readily obtainable. The lower leaves for a space of three knots should be removed without tearing the skin of the shoot, then with a sharp knife cut half way through the shoot just below a joint, and make an upward slit so as to form a tongue; and having made a shallow bed around the plant, gently bend down the layer into this, and fix it with a wooden hook or a layering pin of iron, the slit being kept open whilst doing this. The layer being fixed should be mounded up with the prepared soil, and so on with all the other layers round a plant. Apply water to settle the soil, and afford water daily in hot, and less often in dull weather. In a month or six weeks the layers will be sufficiently rooted to warrant removal. When a layer is prepared, the tips of the "grass" should be cut off.

Pinks.—These may be propagated by pipings inserted in light, sandy soil, placing a hand-light over them until rooted; but they root more quickly when layered and treated like Carnations.

The Budding of Rose-stocks.—The present is a good time to begin the budding of dwarf and standard Rose-stocks, the operation being carried on for the greater part of the month of August. If the bark will not run readily, deluge the soil after slightly loosening it with a digging-fork or a crowbar, and wait for a few days for the sap to rise. Dog Rose-stocks for standards should have had three of the stronger shoots selected in June, and the other removed or considerably shortened. Stout dormant buds from the base of strong young shoots of half-ripened wood should be taken of the varieties of which it is desired to increase the stock, and care taken when stripping the rind from the woody portion not to pull out the heart of the buds. The buds should be inserted in a T-shaped slit made with the young shoot of the Dog Rose-stock close down in the fork, and should be earthed with bound in with worsted or fine raffia. In the case of dwarf stocks of the Seedling Briar and Manetti, the buds are inserted low down below the ground level, and the soil is brought up and slightly above the inserted bud. All buds inserted should be examined in a fortnight after the operation, and tight ligatures loosened and re-fastened.

Standard and Dwarf Roses.—After the first flush of bloom is passed slightly shorten the longer shoots, remove all weak and blind, that is, flowerless shoots, but do not denude the plants of too many shoots, or harm will be done instead of good.

Anemone coronaria.—Seed may now be sown on rich soil in a sunny position where the plants can remain to flower. Before sowing, mix the seed which is woody with some damp silver sand by rubbing it between the palms; sow in quite shallow drills or broadcast, and cover with half an inch of soil. The seed may be sown in pans or in boxes, and the seedlings transplanted, but the former method is preferable.

Hints on Routine.—Mow lawns, cut grass-edgings, roll walks after rain, and maintain neatness and good order in every part of the garden and pleasure-grounds.

FRUITS UNDER GLASS.

By MALCOLM McINTYRE, Gardener to Sir CHAS. TESSANT, The Glen, Inverhouston, Peeblesshire.

Seedling.—This season it has been a common occurrence for the foliage to scald, and the berries also, to a greater extent than usual. This mishap generally prevails in vinerias in which the rods are too near to the roof, and the ventilation is inadequate; but it occurs also from neglect to give air early in the day and afford a gentle heat in the hot-water pipes, and thereby obtain a more buoyant atmosphere. Scalding of the fruit has been assigned to a variety of causes, but there can

be no doubt that it is brought about by the same conditions which cause the foliage to scorch; and it can be arrested by paying timely attention to the ventilation and temperature of the vinery. Air should be admitted rather freely, especially in the early hours, and a small amount at night, together with genial warmth in the heating apparatus, maintaining a temperature of 70°. It is a very prevalent malady with Lady Downes' Seedling, and in lesser degree with the Muscat of Alexandria—and the Black Hamburgh will also get scalded, especially when the bunches are exposed to powerful sunshine after a period of still, cold weather. It always occurs at the end of the stoning period, i.e., about three weeks before the berries change colour. In modern vinerias, having large panes of glass, a slight degree of shading is called for at this period, and during the early stages of ripening. For Muscats, a double thickness of herring-net drawn over the roof is of great service in breaking the rays of the sun from mid-June to the latter part of July or beginning of August, according to the time at which the Grapes finish stoning. Some Vines in vinerias glazed with large panes of glass are the better for a slight amount of shade during the hotter months.

Peaches and Nectarines.—Early varieties that were started during December, as for example, Alexander, Early Beatrice, and Waterloo, or even later ones, as Hale's Early, Dr. Hogg, Royal George, and Stirling Castle, from which the fruits have been gathered, may now be pruned to the extent of removing from them the shoots which have borne fruits, and any others that are obviously not needed. A greater degree of light and air will thus be admitted to the trees generally. If the roof-lights are removable it is better to take them away, but if this cannot be done, to throw them open as widely as possible. Keep the trees perfectly free from insects, using insecticides for this purpose if necessary. Afford water to the roots as often as is required, and to weakly trees afford weak manure-water. A mulch may be applied in order to keep the border moist. Syringe the trees once or twice a day.

Succession Houses.—The fruits on trees which were started early in February will now be ripening, and as soon as these have been gathered, prune the trees as described above and syringe them daily. Stop all laterals back to one joint, or allow an extension if the buds are in an advanced state, and prevent premature ripening of the foliage by encouraging continued root action. When the buds are well formed and the wood well matured, admit all the air possible by day and night. If scale be found on any of the trees, and these are cleared of fruit, they may be dressed with petroleum emulsion and water, stirring the liquid well when using it. Keep the border moist, and afford manure-water to trees that show signs of weakness, or which have carried a heavy crop of fruit.

Late Houses.—If it is needful to accelerate the ripening of the fruits, ventilate the house freely up to 10 o'clock in the day, then reduce the ventilation gradually so that at 4 P.M. the temperature may be 80° or 85° when closing the house. Syringe the trees well at this time, and allow the temperature to rise to 90°. About 6 o'clock admit a little air, so that some of the moisture in the house may escape, and the temperature gradually cool down. Tie in the shoots as occasion requires, and retain no more of them than are necessary. Keep laterals stopped back to one leaf, but allow a little growth to encourage circulation of the sap. If gross shoots push laterals from their leaf-buds, cut them back to where the buds remain undeveloped; or if likely to disarrange the balance of the tree, or the distribution of the sap, cut them off altogether. Draw away the leaves from before the fruits, and raise these up to the light as much as possible. Peaches are not much prized unless coloured. The flavour of Peaches is generally good in proportion to the amount of colour they possess.

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

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

Letters for Publication.—As well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents. The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 30.—Royal Horticultural Society's Committees, Meeting at Westminister.

WEDNESDAY, JULY 31.—Midland Carnation and Peetree Societies' Exhibition, in the Botanic Gardens, Edgburgh, Birmingham (2 days).

SALES.

FRIDAY NEXT.—Imported and Established Orchids; Orchids in flower and bud, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick 63.2

ACTUAL TEMPERATURES:—

LONDON.—July 24 (6 P.M.): Max 70° Min. 58°.
July 25.—Dull, some rain, thunder storms.
PROVINCES.—July 24 (6 P.M.): Max 67, Home Counties; Min. 57, Shetland.

In the twelfth annual report of the Missouri Botanical Garden, Mr. H. C. HENRICH has published a very complete and elaborate account of the garden Beans cultivated as esculents. This was founded upon the comparative examination of all the varieties procured from leading American and European seedsmen, and cultivated in the Missouri Botanical Garden at St. Louis. The varieties are classed under five genera, *Phaseolus*, *Vicia*, *Bolichos*, *Vigna*, *Glycine*, of which the three last are not much grown in this country. Three species of *Phaseolus* are recognised, viz., *P. lunatus*, *P. vulgaris*, and *P. multiflorus*. *P. lunatus* is a native of Brazil, while the other two have not yet been found wild. *P. lunatus* furnishes the Lima-beans, but is not much grown in this country. Under *P. vulgaris*, the Haricot-bean, more than 130 varieties are enumerated and described, mostly of interest to American growers; but many, such as the Mont d'Or, Sion House, Long Negro, Kentucky Wonder, Veitch's Climbing, are well known on this side of the Atlantic.

Of *P. multiflorus*, the Scarlet Runner Bean, only seven varieties are enumerated, viz., Black Runner, White Runner, Mammoth, Chelsea, Scarlet Runner, Best-of-All, and Painted Lady. It appears that these are comparatively little grown in the States, where the Lima Beans are preferred.

The Broad Beans, of which some fourteen are enumerated, are all varieties of *Vicia faba*. It was cultivated by the ancient Egyptians, as appears from the discoveries of FLEINHENS PERRIE and others. It is not considered to have been a native of Egypt. WITTMACK found the seeds among those

collected at Troy by VIKETOW. Whence then did it come? Some say from the southern shores of the Caspian. HOOKER, in the *Floca of British India*, i., 179, suggests that *Vicia narbonensis*, a Mediterranean and oriental species, was the source whence the cultivated bean was derived. The native country of the Haricot and of the Runner Beans is likewise not known with certainty, but such evidence as we have points in no uncertain manner to tropical South America. Curiously enough, ALPHONSE DE CANDOLLE, in his *Origin of Cultivated Plants*, makes no mention of *P. multiflorus*.

NARCISSUS KING ALFRED.—This magnificent variety, a photograph of which forms the subject of our Supplement this week, was produced by Mr. P. J. KENDALL, of Newton Poppleford, near Ottery St. Mary, Devon. It was awarded a First-class Certificate by the Royal Horticultural Society in March, 1899, and has also been awarded First-class Certificates this spring by both the Midland Daffodil and the Cornwall Daffodil Societies. The flowers are of a very deep rich yellow, and of remarkable substance. It is one of the largest varieties in existence, and is a very strong grower. Unfortunately, the initial letters of Mr. KENDALL's Christian name are incorrectly given in our illustration.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, July 30, in the Drill Hall, Buckingham Gate, Westminster, at a lecture on "Some of the Plants Exhibited" will be given by the Rev. Professor G. HENSLOW, M.A., V.M.H.

OUR ROSE AND LILY NUMBERS.—Whilst we are regularly and properly reminded of blunders and shortcomings, from which no journal can be entirely free, it is unusual for us to receive letters of thanks and congratulation on our endeavours to please our clients. On this occasion our efforts seem to have been crowned with unmeted success, and we have to acknowledge with great gratification the numerous appreciative letters we have received.

"RHODES'S STEAMSHIP GUIDE."—Edited by THOMAS RHODES (London; GEO. PHILIP & SON, 32, Fleet Street; Liverpool; PHILIP, SON & NEPHEW, 15-51, South Castle Street). A fascinating book for the armchair traveller, and a useful guide for the intending globe-trotter. It has alphabetically arranged lists of ocean services, ships, and ports; with information under each heading. The present (1901-2) edition is naturally fuller than previous issues, and the low price brings it within the reach of all classes.

ROYAL APPOINTMENT.—We learn that a Royal Warrant has been granted to Messrs. WEBB & SOXS, of Wordsley, Stourbridge, appointing them seedsmen to His Majesty the KING.

ROYAL NURSERYMEN.—Messrs. IRISH LOW & CO., Bush Hill Park Nursery, Enfield, inform us that they have received Special Appointment of Nurserymen to His Majesty the KING.

THE LOUGHBOROUGH GARDENERS' ASSOCIATION journeyed to Alton Towers on the 10th inst., and inspected the many features of interest in those beautiful gardens. Mr. GILMAN, Lord SHREWSBURY's head gardener, showed the company of seventy-three persons everything that was to be seen, and upon returning home, after a most enjoyable day, the visitors felt much indebted to that gentleman for the trouble taken to make the event a memorable one.

EUCHARIS GRANDIFLORA.—Notwithstanding the ravages of the bulb mite, this invaluable stove-flowering species is still cultivated with unqualified success in some gardens. We have recently received a photograph from Mr. PAGE, Silwood Park Gardens, Ascot, of a plant bearing sixty flower-spikes, and about 300 flowers. What a wealth of pure white blossoms from a single pot of bulbs! The plants appear to be in the best health, and have large, strong leaves. We only refrain from publishing the photograph for the reason that we have already illustrated many other instances of success with this plant.

THE DEVON AND EXETER GARDENERS SOCIETY, whose members had their annual outing this year to Cardiff, enjoyed their visit perfectly. The party of nearly one hundred persons journeyed from Exeter on the 17th inst., and were invited to visit the annual exhibition of the Cardiff and County Horticultural Society then being held in the Sophia Gardens. By permission of the Marquis of BUTE's agent, an inspection was made of the interior of Cardiff Castle, many of the rooms in which were built and furnished in oriental magnificence by the late marquis. Mr. A. PETERGREN conducted the party through the gardens and pleasure grounds, where many a hint was obtained in the successful cultivation of fruits and vegetables. Mr. A. HOPE, secretary, and his committee, were much gratified that the arrangements worked so smoothly.

XANTHOCHYMUS PICTORIUS.—Under this name we have received from Mr. GUTTERIDGE, Curator of the Liverpool Botanic Gardens, handsome golden-yellow fruits (see illustration fig. 26, p. 76, in our present issue), which are evidently allied to those of the plant yielding Gangee. Mr. GUTTERIDGE tells us that the plant fruits freely every year, and that young plants are freely obtained from seed.

CASSELL'S DICTIONARY OF GARDENING is nicely got up, and the cultural details are very serviceable for reference. The illustrations, are useful, but require some indication as to the actual size of the flowers, thus, at p. 72, *Aristolochia triacaudata* is shown as if larger than the gigantic *Aristolochia gigas* var. *Sturtevantii*.

PLANT-BREEDING.—An International Conference on Plant-breeding is, as we have previously announced, likely to be held in New York, U.S.A., some time during the year 1902. The preliminary steps for the event are being made by the Horticultural Society of New York, and persons in any way interested should communicate with the Secretary, LEONARD BARROX, whose address is 136, Liberty Street, New York City, N.Y. The Hybridisation Conference which was held in London two years ago was attended by several horticulturists from America, whose presence was highly appreciated, and the suggestion was made at that time to confine the work across the water. British representatives may be sure that they will receive a hearty welcome.

GARDENING FOR BOYS.—A contemporary informs us that "good gardeners are deplorably rare." Well, this is bad news, but the panacea is produced in the fact that the London County Council has offered to London boys an opportunity of getting a thorough training in this branch of industry. The Council's Technical Education Board offers scholarships to boys who are leaving public elementary schools, so that they may go through a thorough course of training at the School of Practical Gardening, now established by the

Royal Botanic Society in Regent's Park! The pupils who left the school last summer have obtained good situations. The gardening profession will now rejoice and be exceeding glad.

APPLES AND PEACHES IN THE UNITED STATES.—According to the latest information we learn that the average condition of the Apple-crop, on the whole, favourable, though in some of the larger producing States the condition is somewhat below the ten-year average. Of the Peach crop, we are told, that present prospects are highly favourable. In every important Peach-growing State the crop is considerably above the average—except in California.

YORKSHIRE NATURALISTS' UNION.—The 160th meeting will be held at Masham, for the investigation of Colsterdale, Birk Gill, Armagill, and the district adjacent to the confluence of the Burn with the Yore, on Saturday and Monday, August 3 and 5, 1901. Permission has been kindly granted by Lord MASHAM to visit Swinton Park and his estate; also by Mr. THOS. AITON, for the Tanfield Lodge estate. Members must take great care not to disturb the game, and in accordance with the policy of the Union, they must not take the roots of Ferns or rare plants. Being so near Aug. 12, the permission does not extend to the moors, and members are requested to confine their attention to the low grounds. The tract of country appointed for examination is Colsterdale, the valley of the river Burn, with its two main feeders, Birk Gill and Armagill, the full length of the stream being about 10 miles. It seems to be an absolutely uninvestigated and therefore virgin soil for the Union, which has never before in its history appointed a district for an excursion about which so little is known. "On the south of the river [Yore] we have an undulating moorland gritstone country, sloping suddenly towards the east, and penetrated by a dale, the stream [the river Burn] of which runs from west to east, and has numerous branches. It is about 10 miles in length, and the dale is called Colsterdale. The town of Masham stands upon the banks of its stream, not far from the point where it joins the Yore, the latter being here 250 feet above the sea-level, and the top of the ridge which separates Colsterdale from Covedale being upwards of 1500 feet above it." Mr. WM. CARTER, senr., writes that the flora of the district is fairly extensive, but of course in August the wealth of flowers is overpast. The following are the most notable plants that occur:—*Epipactis latifolia*, *E. palustris*, *Orehis ustulata*, *O. pyramidalis*, *Gymnadenia conopsea*, *Ophrys muscivora*, *O. apifera*, *Nesofia spiralis*, *Listera nidus-avis*, *Paris quadrifida*, *Primula farinosa*, *Parnassia palustris*, *Trollius europæus*, *Drosera rotundifolia* (*D. anglica* used to occur, but is probably now extinct), *Actæa spicata*, *Leopard's Bane*, *Wintergreen*, *Oak Fern*, *Beech Fern*, and *Moonwort*. Information as to routes and programme of meeting may be obtained from the Hon. Secretaries, W. D. ROBERTS, 259, Hyde Park Road, Leeds; and E. HAWKSWORTH, Goodman Street, Hunslet, Leeds.

PUBLICATIONS RECEIVED.—From the Western New York Horticultural Society, *Proceedings of the Fortysixth Annual Meeting, Rochester, N.Y.*, January.—From the Department of Agriculture, Central Experimental Farm, Ottawa, Canada, *Appl. Culture and Lists of Apples suitable for Ontario and Quebec, with description of Varieties*, by W. T. MACDON (Bulletin No. 37, April, 1901).—From the Ontario Department of Agriculture, Toronto, *22nd Annual Report of the Fruit Experiment*

Stations of Ontario. Fruit-growing has become of great importance in Ontario, and the Secretary of the Department has begun the work of illustrating and describing the fruits, and invites notes of criticism from pomologists generally.—*Thirty-second Annual Report of the Fruit Growers' Association of Ontario, 1900*. Published by the Ontario Department of Agriculture, Toronto. Much attention has been devoted to means for checking the spread of the San José scale, and there are also here Notes on New Fruits, Experiments in Fruit-growing, Canadian Fruits at Paris Exposition and in British Markets, &c.—*Transactions of the Massachusetts Horticultural Society for 1900, Part II*. Contains the reports of meetings and of committees.

PLANT PORTRAITS.

- AZALEA INDICA MADAME MORFVN. Double flowers, white, with deep rose-colored centre, some of the petals spotted. It is said to have originated as a sport from *A. Imperatrice des Indes*. *Revue de l'Horticulture Belge, June*.
- BEGONIA CALEDONIA. *Revue de l'Horticulture Belge, June*.
- CLANTHUS DAMPFIELD. *Le Jardin, July 15*.
- CYBELLA PLUMBIA. *Garden, July 6*.
- CYRTOFACHYS RENDY VAE DEVAVERIANA. *Revue de l'Horticulture Belge, July*. A low growing, palm with pinnate foliage, the pinnæ linear, the petioles and rachis of a rich crimson colour. Native of Malaya. The plant obtained as a seedling raised by M. DE SMET DEVAVER.
- PEAR NATIVELY PLANT. First exhibited in 1854, characterised by beauty, excellence, late ripening, and productiveness. *Bulletin of Arboriculture, June*.

NOTICES OF BOOKS.

BRITISH TREES, WITH ILLUSTRATIONS. By the Hon. Stanhope Tollenache, (Sampson Low, Marston & Co., St. Dunstan's House, London.)

The chief attraction of this book consists in the illustrations, which are from photographs of trees upon the same scale of magnitude, and taken with the same camera. Forest-trees indigenous, or such as have been naturalised to Great Britain, are alone dealt with, and their portraits certainly form a fine book of beauty. The modern custom of illustrating natural history books with actual reproductions of the subjects is a great improvement upon the often idealised representations and sketches formerly used. So we have here this portrait-gallery of forest favourites, and to each likeness is appended a simple description of the characteristics of the species, with as much information as to its habits, uses, &c., as the average amateur is likely to need. The book is not encumbered with scientific details, though the names and plain statements are accurately given, and it is pleasant to miss the historical traditions and half-verified folklore which, given in patronising language, too often spoil a "popular" book. Mr. Tollenache's handsome volume is well suited for reference when the names of trees are under discussion, though it must be noted that the illustrations show only the growth and form of typical examples of growing trees; but no details of foliage or flowers are appended to assist in the determination of cut specimens. The book has no scientific pretension, but nevertheless a few errors may be pointed out. It is a mistake to say, as at p. 40, that the Occidental Plane is the one generally planted in England. The reverse is, of course, true, "*Betulus*" should be *Betula*. The term "British" is made to include many trees cultivated in Britain; but that only adds to the attractiveness of the volume. The representations of the Coniferous trees are specially good.

THE SUBURBAN GARDEN AND WHAT TO GROW IN IT. By F. M. WELLS. (London: Sampson Low, Marston & Co., St. Dunstan's House.)

This book has one distinct recommendation; it is written from experience, not compiled from books and catalogues. It is what it claims to be, a simply-written treatise on suburban gardens, with advice concerning their laying-out and planting. The author, like every other intelligent plant-lover, is much averse to the ordinary square or oblong garden-patch, with four paths and four borders outlining a small lawn. Objection is also made to the too exclusive use of commoner plants, and to the universality with which these varieties are employed. But there is this excuse for such want of enterprise; that the tenant of the ordinary suburban house is rarely a resident therein for many years, and is naturally disinclined to incur the expense of remaking his landlord's garden, and stocking the same with choice and rare plants.

Still, the counsel given in the book is all good for those who have means to abide by it, and time to await the results of their labours. There is a description of the author's half-acre patch, and of the pains taken with it. Wisely indeed does the writer say that "it is worth a good deal to realise one's limitations, and to abide by them," not striving for more beauties than space permits, for forest trees in limited areas and for a display of many styles where there is room for but one.

In the few pages before us, the quantity and quality of the cultural instructions are naturally small, so that the general advice is more original than are the details; the chatty part being acceptable, in spite of the unfortunate introduction of "my lady." These side allusions to anonymous persons have become a weariness in modern garden literature. We prefer practical hints, such as the following: "There is another point that should never be lost sight of in these very small gardens. The owner of each one should aim at striking a distinctive note. He should introduce some one feature or plant that shall raise it above the monotonous sameness of these suburban strips of gardens." Quite so; one fine shrub or climber; one well-filled bed can be made the first step towards improvement, and the substitution of rare for common sorts of other plants may or may not be gradually made afterwards.

"TEIGNMOUTH: ITS PAST HISTORY AND PRESENT INTERESTS." By BEATRICE F. CRESSWELL. Illustrated by GORDON HOME (London: The St. Bride's Press, Ltd., 21, Bride Lane, Fleet Street, E.C.4). This is No. 15 of a familiar series of guide books that, as the prospectus truly says, "treats of a charming Devonshire sea-side resort and its equally charming surroundings." An interesting literary association links Teignmouth with MACKWORTH PRAED and KEATS, the latter having issued *Endymion* while lodging in this town. This handbook contains a 1-inch Ordnance Survey map of Teignmouth and its surroundings. A chapter on driving and cycling in the neighbourhood, and some notes on the natural history of Teignmouth, complete a very handy little volume. The Natural History Notes are rather scanty; but this must be forgiven in a book that makes no claim to being comprehensive or scientific.

"WHAT IS A KINDERGARTEN?"—By GEO. HANSEN (D. P. ELDER and MORGAN SHEPARD, San Francisco). Each of us has his or her idea concerning the proper training of children; and Mr. HANSEN has put his theory into words,

In trying to answer his own question, he "feels it his duty to build upon and build out FROBEL'S lines with the aid of his professionalism." The kindergarten, then, is an actual recreation-ground, planted and laid out according to the requirements of the children. "The teacher shall not attempt to explain any of the habits of those plants with which I insist the child should be surrounded. . . . Remember, every child in your charge is an Edison, every tot a Columbus; and the idealising disposition of all of them sees a Garden of Eden in a vacant lot. I insist upon more association of plants and children." Mr. HANSEN is indeed very positive. He gives schemes, with illustrative plates, for laying out gardens of various sizes and shapes, and is quite certain which plants should be cultivated and which excluded. It is all meant for the best: for the good of the children, and the author has quite a right to his own ideas, and to express them if he wishes to do so. Those specially interested in the education of children by a system, will like to read the instructions here given, and may glean hints even if they cannot agree with the entire scheme. There is, at least, no doubt on the one main point; that association with plants and with Nature generally cannot but be beneficial to the little ones as well as to those of larger growth.

"WORKMEN'S COMPENSATION ACT."—Mr. W. A. WILLIS, of the Inner Temple, has published through BITTERWORTH & Co., the full text of the *Workmen's Compensation Acts, 1897 and 1900*, together with notes on those Acts, as well as on the Employer's Liability Act of 1880. This edition, the seventh, contains notes on the Act of 1900, which extends the principal Act to "employment in agriculture, affecting thereby not only farmers and market gardeners, but a large number of persons who up to the present have not regarded themselves as engaged in agriculture." The expression "agriculture includes horticulture, forestry, and the use of land for any purpose of husbandry, inclusive of the keeping of live-stock, poultry, or bees, and the growth of fruit and vegetables." A copious classified index is appended.

MESSRS. LEE & NIGHTINGALE, 15, North John Street, Liverpool, have also published a *Handy Guide to the Workmen's Compensation Act*. This pamphlet contains explanatory notes for the use of farmers and others, and should be useful in elucidating the verbal technicalities of the Act. Mr. JOHN GRIFFITHS, solicitor, says in the introduction, that:—"Briefly, the purport of this Act is to give to every farm-labourer and others included in the Act, compensation at the rate of half his weekly earnings, so long as he is incapacitated by an accident befalling him during his employment. In case the accident causes the man's death, it provides that his dependants shall receive compensation on the scale of three years' earnings, if the deceased has been so long with his employer, or £150 at the least. This compensation is to be paid whether or not the accident has been caused by negligence, unless it can be shown that it was directly due to the serious and wilful misconduct of the injured man." This is the gist of the subject in a nutshell; the details are not less carefully dealt with. The pamphlet is obtainable from Messrs. LEE & NIGHTINGALE, 15, North John Street, Liverpool.

"FLORA CAENSIS."—*FLORA OF TROPICAL AFRICA*.—Botanists will learn with great satisfaction of the publication recently of another instalment of each of these important works. The fifth volume of the Cape Flora

opens with an account of the Acanthaceae, by Mr. C. B. CLARKE, an order which is largely represented; Selaginaceae, treated of by Mr. ROEPE, is also a large order; Verbenaceae, enumerated by Mr. H. W. PEARSON, includes likewise a large number of species. The *Flora of Tropical Africa* is now in its eighth volume. The most important orders monographed in the present part are the Commelinaceae, by Mr. C. B. CLARKE; the Palmaeaceae, by Mr. C. H. WRIGHT; the Aroidaceae, by Mr. N. E. BROWN, as well as some smaller groups.

We are grateful to miss long speeches from would-be "characters" with wonderful names, and to find the whole book, though naturally limited in scope, practical in design. Garden books by ladies have multiplied greatly lately, and we recommend every ardent amateur to write one. It is not necessary to publish it in an over-crowded market, but friends would like to interchange their diaries and ideas while these are yet in manuscript. Not that the *Garden in the Suburbs* is unworthy of publication, but that it has had many

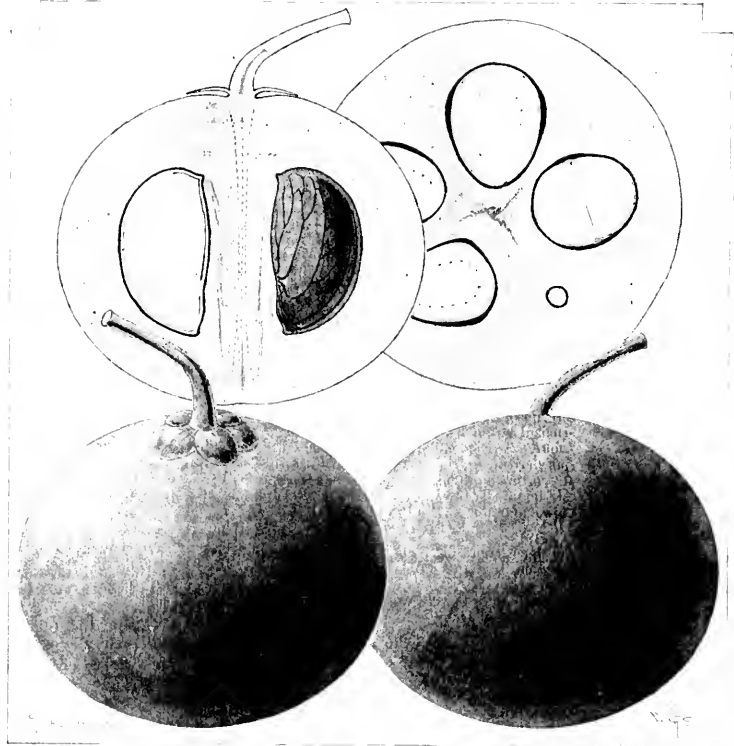


FIG. 26.—FRUITS OF XANTHOCHYMUS PICTORIUS: YELLOW.

(see note on p. 71)

"A GARDEN IN THE SUBURBS," by Mrs. LESLIE WILLIAMS, with illustrations. (JOHN LANE, The Bodley Head, London, and New York.) Here is another gardening book from a lady's pen, and it is gratifying to read that it is the "outcome of some happy years of garden work," not a mere product of armchair theorising. Suburban gardens certainly deserve the attention now bestowed upon them by writers, for they suffer from the drawbacks of both town and country plots. There is the inevitable "dear pussy" (the writer's term), often a heavy soil and much smoke, yet plenty of bird and insect enemies to be defeated. Mrs. WILLIAMS gives pretty illustrations of well managed nooks and corners, and a plan of a small plot showing what can be done with it. The chapters are, some of them, named after the months of the year, and the friendly hints incorporated will help many an amateur, whom more formal information might dismay.

forerunners. We commend it to suburban gardeners, to lighten the dullness of heavy treatises and of catalogues with mere epitomes of routine work.

"FLOWERS AND FERNS IN THEIR HAUNTS."—By MABEL OSGOOD WRIGHT. With illustrations from photographs by the author and J. HORACE McFARLAND (New York; The Macmillan Co. London: MACMILLAN & Co.). This is essentially a "pretty" book, sent out by an enthusiastic lady whose acquaintanceship is chiefly with the country on the further side of the Atlantic. She sagely, but without much originality, considers that wild flowers are never so perfectly charming as when in their natural habitat. "The flower in its haunt is a part of the landscape, a tint on Nature's palette not to be heedlessly removed." But she knows little of the botanist, confusing him with the mere collector; hints that his

NURSERY NOTES.

MESSRS. J. LAING & SONS.

Forest Hill, Catford, and the southern slopes of Norwood Hill remain in spite of the busy builder, comparatively rural, and the resident nurserymen, unlike their *confères* nearer London's centre, have not considered that the time has come when they must go further afield. Fogs are thick at times, and the "blacks" are not unknown, but the sulphurous fumes of London smoke are diluted with Surrey air as to be comparatively innocuous. Indoors plants, such as *Streptocarpus*, *Gloxinias*, *Begonias*, *Orchids*, and general nursery stock in the houses and grounds were looking clean and vigorous on the occasion of a visit of inspection made on the invitation of Mr. H. Laing a fortnight ago. It is well to be accurate as regards the date, for the reason that the tuberous-rooted *Begonias*, for which it is almost needless to remark that the firm of Laing & Sons has been celebrated for almost a generation, would not, as we were informed, be really at their best for a week or ten days. Nevertheless, the show of bloom would have satisfied anyone less critical than the present head of the firm; and although there were great numbers of expanded blooms, there were many more buds coming on.

Some so-called "frilled" *Begonias*, some white forms having the fragrance of the *Violet* or *Maréchal Niel* Rose, were remarked. Double-flowered, named collectively *Duplex*, in very brilliant colours, are becoming common, not purposely worked for by the cross-breeder, but individuals which have appeared fortuitously among the seedlings raised at this nursery, and now being turned to good use. They have just enough doubling of petals, or to speak more correctly, petaloid forms of stigmas, in the blooms to impart solidity without destroying the characteristics of the *Begonia*, and making it look like a *Carnation* or a *Camellia*. Some of these "*Duplex*" have frilled edging, similar to the *Carnation* at present *en vogue* in the United States of America, which certainly adds to their attractions.

The pose of all the *Begonia* flowers to-day is much better than formerly, and they look you in the face without the support of a concealed stick—a decided gain from the decorative gardener's point of view, but not so for basket-work, for which drooping *Begonias* are most suited, and of which there is no lack. One of the large span-houses was filled with plants in pots of double-flowered varieties, of which extremely fine ones were noted in *Queen Alexandra*, a very big cerise-coloured flower; in *Lord Roberts*, *White Swan*, and *Duke of Fife*. Out-of-doors beds of the useful red-coloured *Begonia Bavaria* were noted—a dwarf form of the *floribunda* type.

The *Streptocarpus* have been very fine, the blossoms large and prettily marked. Efforts are being made to secure other and brighter tints in blue and purple, of which as yet there is a dearth; and by cross-breeding from varieties showing moderate leafage, a neater form of leaf is being sought for. Of this last, at the present day, there is no evidence. In some few instances a doubling of the flowers was remarked, an alteration which scarcely looks like an improvement, although it is sure to come. The plants are now being fertilised, and the main flora is over for 1901.

Gloxinias occupied houses to themselves—an excellent strain, with pendent leaves and clear, distinct colours. *Caladiums* have been a speciality here for many years, and we entered a house filled with these plants, with a

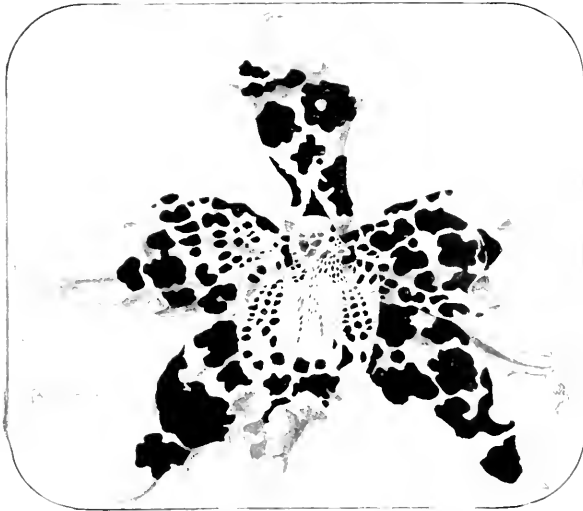


FIG. 27.—*ODONTOGLOSSUM CRAWSHAYANUM*.

Shown by Mr. H. Crawshay, Esq., of Rosefield, Sevenoaks, at the meeting held at Chiswick on Tuesday and Wednesday, July 16 and 17, when it received an Award of Merit (See Report, p. 99, in previous issue.)

chief glory amid lovely scenery is the adding of some treasure to his vasculum; but the same lady whose opinions are as above quoted has dedicated her book to a pony, and treats us to the usual feminine digressions concerning *Floxyer Hat* and *Time o' Year*. These nick-named characters are no doubt useful in making a little book into a large one, but in gardening and country matters generally we have long ago heard all they have to say. So

that *Flowers and Ferns* is not to be taken too seriously. It is pleasant enough reading, when the authoress keeps to her subject, for it must be a bad book indeed on such a topic that cannot be made interesting. The illustrations (on nicely toned paper) are delightful, again not specially original or striking, but a series of really pretty pictures, which we have pleasure in turning over. To non-scientific readers the book will be specially acceptable.

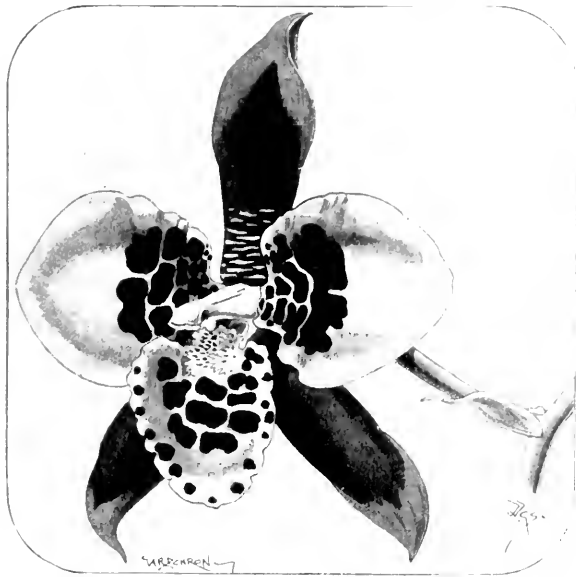


FIG. 28.—*ODONTOGLOSSUM MACULATUM THOMPSONIANUM*.

Shown by W. Thompson, Esq., of Wallon Grange, Stone, at the meeting held at Chiswick on Tuesday and Wednesday, July 16 and 17 last, when it received a First-class Certificate (See Report, p. 99, in previous issue.)

line bit of *Gloriosa superba*, well flowered, growing on a trellis erected over the entrance. We may specify C. Alexander III., which is the finest dark crimson, in leaf, form, and habit a fit companion to the well known C. argyrites; C. Lord Rosebery, C. ornatum, C. illustris, a pale tinted leaf, with red veins; Lord Derby, Golden Queen, Madame Coquetin, Rose Laing, and John Laing.

In another house numerous large and small examples were observed of the creamy-white variegated *Cordylina australis* variegata. The firm engages rather extensively in the cultivation of Vines for fruiting as pot-plants, and likewise for permanent planting. The stock, consisting of every popular variety, was remarkable for the strength and moderate length of the rods, and the closeness of the nodes. The Vines for fruiting in pots have already finished their growth, and are being very gradually ripened off. Out-of-doors Carnations, Picotees, and Pinks occupy a great deal of space, but the plants were not generally in good bloom, and seemed to need a fortnight more time to perfect them, so that it must suffice if we indicate them.

THE TREE NURSERY.

In this department, not having visited the nursery since 1897, we noted very considerable additions, ornamental (picture trees and shrubs) as well as common species and varieties, fruit trees, and fruit bushes, being found in greater quantity than heretofore, and in a thrifty state. Of rarities of Conifers, we may mention *Picea pungens* Kosteri, a variety with yellow variegation, and *Picea alba* var. *aurea*. *Acer californicum* [?] *aureum* is a satisfactory variety, with telling foliage; as are likewise *Cerasus Mahaleb* variegata, *Catalpa bignonioides* var. *purpurea*, the colour being especially good in the young leaf; *Crataegus Oxycantha* variegata, *Cornus brachypoda* *aureo-variegata*, *Robinia aurea*, *R. angustifolia* elegans, very pretty leafage, and *R. inermis* variegata, *Praxinus nove-anglie*, *Pyrus salicifolia*, a weeping *Morus nigra* in fruit, *Caragana arborea pendula*, quite a handsome variety of a very stiff-habited species; *Ulmus minor*, misnamed, probably a form of the Japanese *U. parvifolia*; *U. umbraculifera*, *Populus trichocarpa*, new. The fruit-trees and bushes have made, notwithstanding the dry weather, excellent growth in this heavy land; and most varieties of Apples, Plums, and Pears on Quince stocks, were abundantly fruited. Every popular variety of Apple is grown on the dwarfing and the free stock, and even young trees on the latter were noted that were heavily laden with fruit. Dwarf-trained Peaches, Nectarines, and stone fruit generally make thrifty, but not too vigorous growth, and the trainers were busily engaged in "tying them out."

Roses.

Of these considerable breadths were remarked, and on enquiry, Mr. Laing told us that he grew about 10,000 dwarf, and 14,000 standard Roses annually. The dwarfs were in full bloom, and so good were they that in selecting a winning forty-eight, one would not have found it needful to search very far.

We remarked a *Clematis paniculata* with the general appearance of *C. flammula*, and with the same grateful aroma, but which is in flower at this season.

Two thousand Chrysanthemums, inclusive of the newest varieties, are being grown in pots, strong, stocky plants, full of promise. A collection of fifty species and varieties of Ivy is well worthy of inspection; as, indeed, is the entire collection of plants grown for sale.

MESSRS. J. VEITCH & SONS' SHOW OF CARNATIONS AND PICOTEES.

The hot weather has not been favourable to these beautiful flowers anywhere in the south, the colours paling and the flowers withering almost before they are fully open. The late rains will, however, have done much to restore freshness in the blooms, and prolong the season of flowering.

The usual quadrangle between the glass-houses was devoted to the plants, and here we found the long, rectangular beds filled with the choicest varieties, and the sun-heat at mid-day in that walled-in space at about 120° Fahr. We were enabled to inspect the following novelties of 1900 and the present year, viz., *Alecinus*, a flower having a lemon-yellow ground colour, marked heavily with purple; *Bertie*, a pinkish-white flower, heavily marked with crimson, and the plant vigorous; *Etarre*, a flower of a soft apricot-yellow tint, very free and vigorous; *Lady Jane Grey*, said to be the best lavender-coloured Carnation, the flowers large, and of capital form; *Mrs. Prinsep*, a large yellow self of good form—a variety good for planting in the border.

Among recent introductions, we may name *Banner*, a full-sized brilliant scarlet flower, which received an Award of Merit from the Royal Horticultural Society; *Comet*, a plant of dwarf habit of growth, maroon-crimson, with smooth petals; *George Maquay*, a very useful hardy border Carnation, pure white flowers of perfect shape, and circular petals; *Isinglass*, scarlet, of much brilliancy—received an Award of Merit from the Royal Horticultural Society; *Rizzio*, a large, full, bright yellow self; and *Sweetbriar*, a pale scarlet-coloured variety, of beautiful shape.

Among yellow-ground Picotees of recent date, we may mention *Caracei*, with a bright rose edge; *Daniel Defoe*, with a rose-red edge; *Edna May*, bright yellow, with a broad pink edge; and *Falkland*, with a bright rose edge, and perfect calyx, the plant of vigorous growth. *Hendigo*, *Joe Willitt*, *Ketton Rose*, *Mephisto*, *Mrs. F. Watt*, and numerous old favourite varieties, were noted.

HOME CORRESPONDENCE.

SOME HERESIES.—A few days ago in Godalming I passed through a vineery 40 feet long which was erected by Boulton & Paul. The place had changed hands, and the present occupier having no regard for indoor gardening, had allowed hot-water pipes and boiler to get out of order. Consequently, the Vines had received no fire-heat for three years. The vineery is a mixed one, containing Black Hamburgh, Lady Downes Seedling, and Muscats. The Muscats and Lady Downes had set equal to many I have seen where fire-heat is used. They were what might be termed a good set, and the Vines were healthy. When the Vines were in bloom, the temperature had for many nights fallen to 45°. The ventilating apparatus at the top of the vineery was out of repair, and so was always open. This seems to suggest that a high temperature is not always required for Muscats when in bloom. In the same garden a Royal George Peach of bush form was growing at the foot of an east wall; its head rises above the top of the wall, and it has received no pruning, and is in no way protected. This tree had several dozen of fruit on it, and was quite clear of green-fly, curl, or any of the maladies to which Peach-trees are subject. This tends to show that the town garden is favourable to the growth of the open standard Peach-tree, as well as many tender and choice flowering shrubs. I have seen a plant of *Choisya ternata* planted out on the open lawn full of blooms with no

protection whatever. When planted in the country in a warm, sheltered spot, I have seen this plant cut by frosts. W.

MILDEW ON VINES.—I noticed in a recent number of the *Gardeners' Chronicle* a correspondent, "W. M.," is in difficulties with mildew on his Vines. For two or three years I had mildew very badly in a vineery here, and I tried all I could to check and prevent it, but to no purpose. At last it occurred to me that perhaps there may be something lurking above the Vines on the roof-glass that may cause it. The following winter, and each winter since, I have had the inside roof-glass wiped over with clean water only, and am glad to say that I have not seen a trace of mildew in the house since doing so. If "W. M.," could only sponge his glass over now it may check the pest. S. Williams, *Holnet Hall, Market Drayton.*

THE BOLTING OF CABBAGES.—I am much interested in the correspondence that has appeared in these pages on this subject. While I admit that some varieties are more apt to bolt than others, and that it may be caused by sowing at too early a date, these are, in my opinion, not the only causes. My practice is to plant autumn-sown Cabbage on the ground occupied by the spring-sown Onion crop, the ground not being dug for the Cabbages, but merely hoed, and the rubbish and weeds raked off. Then drills are drawn 3 inches deep, and at suitable distances the Cabbages are planted in the drills. The hoeing that the land receives during the autumn fills in the drills, and growth is steady. Early in the month of February, according to the weather, the land is lightly top-dressed with nitrate of soda and basic slag or superphosphate of lime, and the ground dug with a fork, and three weeks later another sprinkling of nitrate of soda is applied; if necessary, the ground being stirred once a week with the hoe. It is my opinion that bolting is more frequently caused by a too rapid growth during the autumn and mid-winter, owing to the land being manured and dug previous to planting. *T. H. Shade.*

SWEET PEAS.—Plants that were turned out from pots have been flowering here grandly. In order to prolong the blooming of such plants they should be well mulched with rotten manure, and if this material be objectionable, grass mowings may be used in the fresh state. Afford the plants occasionally some artificial manure-water, such as guano, using about a handful to a 4 gallon water-pot, or Clay's Fertiliser at about the same strength; soot and cow-manure liquid is very beneficial. Gather the flowers as fast as they begin to open, and never allow them to remain long on the plants unless an effect is wanted in the position where they are planted. Syringe the plants with the garden-engine underneath the foliage. Successional sowings will need attention in the matters of staking, weeding, and affording water. If gathered in the bud, and placed in a cool structure, Sweet Peas may be retarded a little; or they may be hastened by gathering them whilst in the bud, and placing them in a warm structure—buds will open beautifully in one night and have good colour. *W. A. Cook.*

FRUIT PROSPECTS IN IRELAND.—The crops of Strawberries are heavy, though the fruit is much smaller than last year's. Cherries are fairly good, and of the commoner varieties they are very good. Apples are an uneven crop, a good crop in some districts, and bare of fruit in others. Out-of-doors Peaches and Pears are similar. *A. O'N.*

SKIN IRRITATION FROM STEMS AND LEAVES OF BRYONIA DIOICA.—The following case has come under my observation: Several plants of *Bryonia dioica*, the upper parts of which a lady wished to remove, were growing round trees in a garden here. She pulled away the stems and leaves with her hands one afternoon last week; the work only occupied a few minutes. In the evening both her hands were covered inside and out with innumerable red

FLORISTS' FLOWERS.

THE YELLOW-GROUND PICOTEE.

A good deal has been written about the Yellow-ground Picotee, its antecedents, and its present position in the world of florists. I can remember it fifty years ago, but more particularly about the year 1858, and I think it is quite safe to say that no good yellow-ground Picotee had been cultivated in England until that date. The coloured plates in the books published by Mr. Thomas Hogg of Paddington, Paxton's *Horticultural Magazine*, and the *Flori-cultural Cabinet*, are not to be trusted—the yellow colours are laid on too deeply; but even if this were not the case, they had not the properties desiderated in the florist's type of a yellow-ground Picotee. My friend, Mr. Simonite, can well remember the fine yellow-ground Picotees exhibited by Mr. Richard Smith, of Witney, Oxfordshire, in 1858. Mr. Smith exhibited his flowers in that year, and they came very nearly to the florist's standard reached in the white-ground varieties; he was able to send out. A variety named Consolation was the best, and second to it was Dr. Horner. There were a number of others, but their names are of no importance, as they have all gone out of cultivation. There was some correspondence in the *Gossip of the Garden* on the production of these flowers, but except for the statement that Mr. Smith had been working up the yellow-ground Picotee for ten years, and wisely destroyed his inferior varieties until he was able to shine forth in such fine varieties as unexpected Dr. Horner and Consolation, Dr. Horner had written about the development of the yellow ground Picotee, and Mr. Smith was in a fair way of verifying his predictions. It is on record that his work was greatly hindered by the loss of most of his finest seedlings by wireworm. He planted his seedlings in beds 18 feet in length by 12 feet in breadth, and from two such beds he trapped by means of carrots about 300 wireworms. Doubtless while this trapping was going on, the Carnations were rapidly disappearing. It would surely be better in such circumstances to take the plants away from the wireworms rather than by the much slower process of getting the pests away from the plants. Experience is worth more than a great deal of theory on this question. I have trapped the wireworms with carrots buried in the ground, but they attacked the Carnations quite as freely as they buried their slender bodies in the carrots. Now in the case of valuable plants, it is much better rather than lose them, to dig up and pot them or plant out if it were possible on ground where there are no wireworms. The fine varieties raised by Mr. Richard Smith as above are not in existence. If they had been taken in hand by someone when Smith was unable to carry on the work, we might by this time have been in the possession of yellow ground Picotees of as high quality as the white ground, and as varied in the colour margin.

No yellow-ground Picotee known to me has served its purpose in life so well as Prince of Orange (Perkins). Maybe the raiser was indebted to the Witney varieties to seed from. I do not know the year it was sent out, but I had it in cultivation about the year 1867-8; and it was a singular co-incidence that the late Mr. John Standish, of Ascot, should introduce about that time another very fine yellow-ground Picotee under the name of Ascot Yellow. But this variety, although it was very fine in quality, and won the First-class Certificate of the Royal Horticultural Society, had a very poor constitution, and it soon died out;

whereas Prince of Orange had been grown for over thirty years. This variety is the original parent of all the yellow ground Picotees now in existence. The late Charles Turner, of Slough, was the first to raise seedlings from it. He had a very fine lot for decorative purposes; but one at least of them, *Xe Plus Ultra*, was free in growth, and was a nearer approach to the florist's standard than Prince of Orange. From this *Xe Plus Ultra* I raised a fine lot of seedlings from this variety by cross-fertilisation. These again were a great advance on the set raised by Mr. Turner, and a second batch of seedlings produced such standard varieties as Mrs. Robert Sydenham, Countess of Jersey, Mrs. Douglas; and one which the fanciers thought superior to any of them was named Remembrance. This variety was a true yellow-ground Picotee, with a narrow margin of deep red or scarlet, without any markings of any kind on the petals. The nearest to this variety in quality is Mrs. Robert Sydenham. This is also a very good representative of the broad-margined variety; it is of a pleasing rose or pink tint, but the yellow colour was not so deep or decided as in the variety Remembrance.

In recent years, Mr. Martin R. Smith has been most successful in raising fine varieties of the yellow-ground Picotee. The Hayes seedlings are distinguished in the first place by a vigorous constitution, and a great variety of colour-margin. Of those in general cultivation, *Empress Eugénie* is a good representative of the narrow margined varieties, although there are many others, such as *Ouida*, *Caravel*, *H. Falkland*, *Heleodorns*, *Lady St. Oswald*, and *Lawzan*; these are the best of the quite new varieties. Of older ones *Borderer*, *Day Dream*, *Hyacin*, *Ladas*, *Mr. Vigol*, *Moliveau*, *Professor*, and *Wanderer*. Many prefer the varieties with broad margins. The best of the newer ones are *Daniel Dofon*, *Edna May*, and *Lady Bristol*. The older ones are *Countess of Jersey*, *Dorvish*, *Heather Bell*, *Mrs. Douglas*, *Mrs. Tremayne*, *Miss Alice Mills*, *Miss Violet*, *Stanley Wrightson*, and *Mrs. Drandiell*. The above is a list of the best of the yellow-ground Picotees. Their culture does not differ in other respects from that of other Carnations, and, with a few exceptions, they may all be treated as ordinary border Carnations.

Many persons scout the idea of growing border Carnations in flower-pots. They reason thus: the Carnation is a hardy garden plant, and should be treated as such; and if it requires greenhouse culture, it cannot be truly described as a border Carnation. This is arguing on wrong premises. Yellow-ground Picotees, and certain choice border Carnations, are not grown in pots because they will not grow in the open border, but because the quality of the flowers is much better from pot plants, and if placed in a greenhouse and shaded from hot sunshine, they retain their beauty much longer. Moreover, if some plants are retarded, and others put in a house with some warmth, they give a succession of bloom; and surely it is more profitable to fill a house full of Carnations than it is one of scarlet Pelargoniums and such-like flowers—but in this matter allowance must be made for individual fancies. I know many gardens where the best greenhouses and the best attention is given to Carnations. On the other hand, I saw some of the choicest border Carnations growing splendidly and flowering beautifully in a famous garden in Sussex in August last. Most of them were planted out; but some of them were growing in vases in the open garden, these latter being allowed to hang over the sides of the vases, and in that way they bore beautiful flowers.

spots as if from the stings of nettles; by night all her fingers had swollen, and the spots had turned to convex, confluent blisters, with an irritation that nothing at hand would allay, and which caused a hopelessly sleepless night. After three days the skin of both hands peeled away. *W. G. S. Dunstable.*

RAINFALL FOR SIX MONTHS FROM JAN. 1 TO JUNE 30.—The following is a register of the rain that has fallen at Rumwood, Langley, Maidstone, in six months:—

January	0.8 inches.
February	1.1 "
March	2.5 "
April	2.16 "
May	1.42 "
June	0.75 "
Total	8.97 "

The heaviest fall in twenty-four hours was 0.56 of an inch. Rain fell on seventy-one days. The rainfall here seems to get less during the spring months, and consequently it is becoming a serious matter with us. We live on a plateau with a valley on either side, which seems to get the rain more frequently than we do at the top. *W. J. Gould, jr., Langley, Maidstone.*

KAINIT.—Mr. Massoe, at the Lily Conference, describing the effect of kainit, called it Strassburg Fertiliser, and you have it so in your report; but it ought to be Stassfurt, and not Strassburg. *Hugo Müller, Crosby Hill, Canterbury.*

AFTER THE RAIN.—We have at last had some heavy thunder-showers after a long spell of dry weather, which made itself severely felt on the pastures, reducing the feed of cattle so much that many farmers were obliged to open their gates and let their stock pass into the meadows which were reserved for hay. This will, of course, cause hay to be scarce, which will tend materially to raise the price thereof during the ensuing winter and spring. This state of things may probably be modified by the import of hay from Canada and other grass-growing countries, which will no doubt be advised of the situation in this country. Oats, Wheat, and Barley, are all short in the straw; the rain may help to fill the ears, but it has come too late to add any appreciable length to the straw. Great breadths of Turnips and Mangolds are a failure, but there are instances where the land has been in extra good cultural condition. There is still, with these timely rains, fair hope for good crops. Potatoes will yet respond in renewed vigour with change of weather. Yesterday I saw a large field which for good cultivation and signs of health and vigour could not be beaten even in the palmiest days of Scottish Potato-growing. These are on the farm of a Mr. Postlethwaite, a west Cumberland man, which is perhaps the neatest, cleanest, and best cultivated farm in Warwickshire. Beans are in flower, but they, too, are short in the haulm; and black aphid has appeared among them, but the rain, let us hope, may stop the spread of this pest. Garden crops were showing signs of the drought, but being more in hand than field crops, have not taken much harm. Applications of water in the evening, together with mulches of short stable-litter and some crumbs of soil drawn over that, saved crops of Cabbages, Cauliflowers, Peas, and Beans, from harm. In gardens that are well looked after, and especially if the soil is retentive, the drought has not done much harm. Speaking personally, my Strawberries, which are growing on a strong, friable loam, are excellent. I use stable-manure, which costs me, delivered at the railway station close by, 1s. per ton. This consists of wood-sawdust, which not only enriches, but has also the effect of making strong hand work freely, allows rain to pass down, engendering a general moisture, which is not so obtainable by the use of artificial manures, and not being grown in "fungophobia," I do not dread any evil consequences from its use. This manure is largely used by farmers in this neighbourhood. *W. Miller, Berkswell, Warwickshire.*

I never use artificial manure of any kind for Carnations. Good loam three parts, one part decayed manure, some mortar rubbish or pounded oyster-shells being used instead of sand to keep the material open.

The size of flower-pots is not of very great importance; but overpotting in this, as in most other things, is to be avoided. Cleanliness, abundance of light and air, are the requisites for success. *Jas. Douglas.*

BORDER CARNATIONS.

There is to be seen in bloom, a fine and interesting set of border Carnations at Chiswick. Possibly the collection may include some varieties to which the term border may be thought objectionable, as they may be of the florists' section. But at least at Chiswick they all come into the same category, being there subjected to out-of-door conditions only. The plants generally seem to have wintered well, the district having during the dull months been singularly free from fogs. It is too much to hope that this indicates permanent improvement. The Carnation collection includes many seedlings, forms always full of interest because no one knows before flowers open what qualities they may exhibit. There are also some named varieties. When this collection is gone over by the Floral Committee, it is to be hoped that under no circumstances will any variety with split calyxes obtain an award, unless they possess very great fragrance as a compensation for this imperfection. It is universally admitted that Carnations of all descriptions now have little perfume. The breeding has been rather in the direction of form, size, and colour, and whilst pod splitting has been freely tolerated, the absence of perfume has been ignored. We badly need a race of free-growing border Carnations that bloom freely, are not specially amenable to fungoid attacks, and have rich scent. We have in new and old, an endless succession of what may be described as house, pot, or show forms of Carnations—practically, we have enough of them. The Chiswick trial should do something to show what varieties are to be very specially recommended for planting in borders. I am not sure whether the Council of the Royal Horticultural Society would not do well to invite for next autumn planting pairs of strong layers of any variety, which they find to be in constitution, free blooming, good habit, and sweet perfume, a good, hardy border variety. There may be in gardens about the country numerous good ones of that nature, and which it would be most interesting to have tested at Chiswick. In some places, Carnations planted out on a carpet of *Violas* are used as bedders. These are seldom a success. Carnations need supports, and netting can keep the sticks from being seen. The body of bloom produced at any one time is not such as to give a good effect; the flowering season, also, is far from being early or prolonged. Carnations never look better than when planted in small clumps of some half-dozen plants, in mixed borders and on good soil; also if not too close together, and there is ample room for layering them in the autumn, one-half the rooted layers being removed for planting elsewhere, the rest being left and top-dressed with old pot-soil, to bloom the following year, then a very fine body of bloom results. The transplanted layers should be allowed to make similar second-season clumps, the old ones being lifted and cleared out, other new plants taking their places. That is the way to keep up a fine show of Carnations in our garden borders; but to have strong plants for removal, layering should be done early. This season, for instance, there seems to be no reason why that work should not be completed by the end of July. A. D.

VEGETABLES.

I MAKE it a practice to grow several varieties of early Peas every year. So far I have found none to equal Sutton's Early Giant. Sown at the same time as William the First, it is fit for consumption at about the same date. The variety has much larger pods, and the Peas are of fine quality. The haulm grows to the height of 1 ft., and the plant is a heavy cropper. Sown on February 26, pods were gathered on June 1. I have sent a few pods for your inspection, *Wm. Duffryn, Elmstree Gardens, Telbury.* [Very fine, well-filled pods. Ed.]

PEA SECTION'S SATISFACTION.

This variety of Pea has done remarkably well here this season; the pods have filled well, and the quality when cooked is good. So far the haulm is free from mildew, and notwithstanding the drought the plants are cropping excellently.

CALLIFLOWER SUTTON'S FAVORITE.

I have grown this variety by the side of several others, and am more than satisfied with the way it has turned in. The curds are solid, white, and of excellent quality. It is of moderately dwarf habit, and can be planted somewhat thickly in the rows. It forms a capital succession to the dwarf Erfurt type, coming fit for use before the *Walteren*. To grow good Calliflowers, especially in dry seasons and on light soils, the land must be broken up to a good depth, and there should be plenty of manure worked in several inches beneath the surface. Plants put out on deeply worked land need little care and attention compared with those growing on shallow cultivated soils. Within the last two years I have had the greater part of the kitchen-garden here trenched, and we are being well rewarded for the labour by the fine produce obtained. *H. M., Wrotham Park.*

Obituary.

MISS ORMEROD.—The death on the 19th inst., at St. Albans, of Miss Eleanor Ormerod removes from among us one who rendered great service by making the knowledge of the men of science available for practical purposes. Indeed, her life was for many years devoted to the interests of agriculturists. She was the youngest daughter of George Ormerod, D.C.L., F.R.S., of Sedbury Park, Gloucestershire, the well-known author of the *History of Cheshire*. Three-and-thirty years ago she gained the Silver Flora Medal of the Royal Horticultural Society for specimens, drawings, and models illustrative of insect depredations. In conjunction with the late Andrew Murray, she formed the collections of economic entomology now in the Bethnal Green Museum. She was the first lady Fellow of the Meteorological Society, and edited a mass of important documents relating to weather and plants. Her *Manual of Injurious Insects, and Methods of Prevention and Remedy for their Attack on Food Crops* enhanced her reputation; but she will be, perhaps, best known by her *Annual Reports and Observations on Injurious Farm Insects*, which she first began to issue a quarter of a century ago. She acted for many years as Consulting Entomologist to the Royal Agricultural Society, and was lately Additional Examiner in Agricultural Entomology at Edinburgh University; and rather more than two years ago the Société Nationale d'Acclimatation de France awarded her the large silver medal bearing the portrait of Godfrey Saint Hilaire. The University of Edinburgh conferred on her the degree of LL.D.; and the Royal Horticultural Society comparatively recently awarded her a Victoria Medal of Honour. For some years past Miss Ormerod had been an invalid, and for upwards of a month had been seriously ill.

SOCIETIES.

NATIONAL ROSE SOCIETY, Northern Exhibition, Ulverston.

JULY 17.—Owing to cool, dull weather up to noon, the Roses in all classes were presented in magnificent condition. Hybrid Perpetuals were grand in the winning stands, of immense size and high colour. Teas and garden Roses were also exceptionally good. It was, without a doubt, the finest Rose show of the season in regard to the quality of the blooms. The arrangements were well carried out by the local committee, and the meeting of rosarians was an extremely pleasant one.

JUBILEE TROPHY.

In the *Jubilee Trophy* class for thirty-six distinct, Messrs. A. DICKSON & SONS, Newtownards, were 1st, with one of the finest stands ever staged for this trophy. The quality of the flowers was exceptionally good. *Horace Vernet*, Her Majesty, Etienne Lede, Mrs. W. J. Grant, Star of Waltham, Reynolds Hole, Prince Arthur, Bessie Brown, Madame Crapelet, Dupuy Jamain, and Souvenir d'Elise, being the most remarkable. Messrs. HARKNESS were 2nd, showing grand flowers of Her Majesty, Madame Etienne Verdier, Comte de Rainbault, Helen Keller, Reynolds Hole, and Mrs. W. J. Grant; 3rd, Messrs. PERKINS, of Coventry.

Fordygrill distinct.—1st, A. DICKSON & SONS, a fine stand, 2nd, Messrs. HARKNESS; 3rd, B. R. CANT & SONS.

Twenty-four trebles.—1st, A. DICKSON & SONS, having Bessie Brown, very fine; Duchess of Portland, fine; Horace Vernet, Mildred Grant, Mrs. John Laing, and Ulster, very good; 2nd, B. R. CANT & SONS.

For thirty-six distinct.—1st, G. PRICE & SONS, Oxford; 2nd, J. BURRELL & CO., Cambridge.

For eighteen Teas distinct.—Messrs. PRICE were 1st, with a fine stand containing *Maman Cochet*, awarded the Silver Medal for the best Tea in the nurserymen's section. Other excellent flowers were *Souvenir d'un Ami*, *Marchal Niel*, *Princess of Wales*, *Bridesmaid*, *Golden Gate*, and *The Bride*; 2nd, A. DICKSON; 3rd, Messrs. CROLL, Dundee.

Twelve Teas.—1st, Mr. J. BURRELL; 2nd, Mr. J. MATTOCK; 3rd, Messrs. HARKNESS.

For twelve new Roses.—Messrs. DICKSON were 1st, showing good examples of *Mildred Grant*, *Mamie*, Mrs. Mackreth, Ulster, and Robert Scott—a fine stand; 2nd, Messrs. PERKINS. For twelve blooms of any white or yellow Rose, the three winning stands all contained Bessie Brown; 1st, Messrs. DICKSON; 2nd, Messrs. PRICE; 3rd, Messrs. PERKINS.

For twelve of any Parker Light Rose.—1st, HUGH DICKSON & SONS, Belfast, having Her Majesty; 2nd, Mr. D. CROLL, with Mrs. W. J. Grant; 3rd, A. DICKSON, with *Mildred Grant*.

For twelve of any Orleans Rose.—Messrs. PERKINS were 1st, with a grand box of *Horace Vernet*, for one of which was awarded the Silver Medal for the best hybrid perpetual in the trade section, a flower of great size and exquisite finish; 2nd, HUGH DICKSON, with Capt. Hayward; 3rd, B. R. CANT, with A. K. Williams.

GARDEN ROSES.

There was a very fine display of garden Roses, which attracted a great crowd throughout the afternoon before both the open and the amateur exhibits. In the open division Mr. J. MATTOCK was placed 1st, for a grand exhibit of eighteen bunches, especially noticeable being *metrantha*, *Lucida plena*, *Perle d'Or*, *Cecile Brunner*, and *Souvenir de Catherine Guillot*. Messrs. FAY & SOX were close 2nd, with grass an *Teplitz*, *Marquis de Salisbury*, W. A. Richardson, *Madame E. Resal*, and *Lady Battersea*, as the best; 3rd, H. V. MACHIN.

AMATEURS.

In the *Amateur Division*, the *Jubilee Challenge Trophy* for twelve distinct, which was very close, and grand hybrid perpetuals were staged in the winning stands. Mr. E. B. LINDSELL was placed 1st, showing excellent flowers, both in form and colour, his best being Her Majesty, *Horace Vernet*, *Duc d'Orleans*, *Fisher Holmes*, *Bessie Brown*, and *Maman Cochet*; 2nd, Mr. F. W. TATTERSALL of Moulcombe. His box contained some grand blooms, two of which won the Silver Medals for the best H.P. and H.T. in this division, viz., *Captain Hayward* and *Bessie Brown*; equal 3rds were awarded to the Rev. J. H. PEMBERTON and Mr. BOYES.

For thirty-six distinct.—1st, Mr. E. B. LINDSELL; 2nd, Mr. H. V. MACHIN; 3rd, J. H. PEMBERTON.

For eight trebles.—1st, Mr. E. B. LINDSELL; 2nd, Mr. F. W. TATTERSALL; 3rd, Rev. J. H. PEMBERTON; 4th, Mr. H. V. MACHIN.

For nine blooms of one variety, except Teas.—1st, F. W. TATTERSALL, with A. K. Williams; 2nd, H. V. MACHIN, with Her Majesty; 3rd, Rev. J. H. PEMBERTON, with A. K. Williams.

For growers of fewer than twenty.—Mr. FOLLY HOBBS, of Worcester, was 1st in all three classes. For growers of fewer than 1000, Mr. MATHON WHITE, of Leicester, occupied the premier position.

colour: Lemon Queen, white; Prince Edward of York, rose-standard, purple veins; Lady Skelmersdale, pink, with white wings; Chancellor, veined rose-salmon; Senator, A striped Pea, purple and white; Little Dorrit, delatetero-seed, with white wings; Miss Willmott, rose-scarlet; Lottie Eckford, very light purple and white; Royal Rose; and Aurora, a striped Pea, light red and white. The exhibit already noticed was shown on the level table in pitcher bottles, but the 2nd prize collection from Mr. ROBERT BOLTON, Warton, Garforth, and the 3rd prize exhibit from Messrs. JONES & SONS, Shrewsbury, was staged in glass bottles, on shelves covered in white cloth; 1st, Mr. Thos. Leitch, gr. to H. WELCH-THORNTON, Esq., Beaupre Park, Basingstoke.

There were three collections of twenty-four bunches in as many varieties, and Mr. F. J. Clark, gr. to MARK ROUTH, Esq., West Hill, Leicester, won 1st prize with some very fine flowers, arranged loosely in vases, and relieved with sprays of Gypsophila, &c.; 2nd, Messrs. JONES & SONS, Shrewsbury; 3rd, The South Metropolitan District Schools, Sutton.

Messrs. JONES & SONS, Bobin Hill Nursery, Shrewsbury, won 1st prize for the best dozen varieties, showing Gorgeous, Hon. Mrs. E. Kenyon, 2nd, Mr. Bolton, Prince of Wales, 3rd, Miss Elizabeth, Duchess of Sutherland, Miss Emily Eckford, Little Dorrit, and Mrs. Eckford, Mr. W. SIMPSON came 2nd, and Mr. DAVID M. ROSE, Elm Villa, Woking, Surrey, 3rd.

The best exhibitor of six varieties was Mr. F. J. CLARK, who staged the varieties Lady Mary Currie, Emily Henderson, Salsopian, Countess of Radnor, Navy Blue, and Prince of Wales. 2nd, Mr. ROBERT BOLTON, 3rd, bunches of three varieties, were best from Mr. SLAS-COLE, the Gardens, Althorp Park, Northampton, and his varieties were Gantz, Miss Willmott, and the Hon. Mrs. E. Kenyon.

TWO VARIETIES TO COLOR

The best white varieties were Sadie Burpee and Blanche Burpee, shown by the Rev. L. KNIGHTS SMITH, Brightstone, Isle of Wight.

Of scarlet or crimson varieties, coccinea and Sunproof, from the Rev. KNIGHTS SMITH, were best.

Yellow or buff varieties that won 1st prize were Hon. Mrs. E. Kenyon and Lady M. Ormesley Gore, from the same exhibitor as the winner in the two preceding classes.

The best pink varieties were Countess of Lathom and Prima Donna, also from Rev. KNIGHTS SMITH.

Rose-coloured flowers adjudged best were from Messrs. JONES & SONS, Shrewsbury, and were Mrs. Dugdale and Prince Edward of York. The best mauve varieties were Countess of Radnor and Duke of Westminster, and the best blue varieties, Navy Blue and Bobin-Panoré, all from Messrs. JONES & SONS.

Of striped varieties those awarded 1st prize were Princess of Wales and America, shown by Mr. R. H. JEFFERY, Southampton.

LAVENDER LATIOLIUS.

MR. R. CHAMBERLAIN, Chessingham Park Gardens, Reading, won a 1st prize for two bunches of the Everlasting Pea, showing flowers of rose, pink, white, and crimson colour, which were very pretty.

THE FLORAL DECORATIONS.

were shown numerously, and for such uses the Sweet Pea is one of the best. In the two classes for decorated dinner tables, showing the use of Sweet Pea foliage in one case, and of added relief in the other, there were displayed as many as nineteen tables. First prizes were won by Miss MARY ANSTEY, 1, Knight Hill Road, W. Norwood, who exhibited in the class where Sweet Pea foliage was the only relief permitted; and by Messrs. E. S. COLE & SONS, Bath.

Messrs. JONES & SONS had the best epergne and wreath; and Miss E. B. COLE the best bouquet.

Mr. Thos. Bolton, gr. to B. WEGGILLIN, Esq., Cosme End, Kingston, had the prettiest buttonhole bouquets.

NON-COMPETITIVE EXHIBITS.

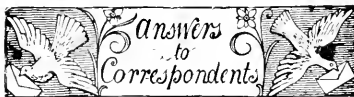
HOBBIES, LTD., Dereham, made a very large exhibit of Sweet Pea, staged and graded. Palms, Ferns, &c., also a large quantity of sprays of Turner's crimson Rambler Rose and other cut roses. Numerous racemose tenuifolia in berry in pots, the berries of scarlet colour, considerably less in size than a Sweet Pea seed, &c. (Gold Medal).

Messrs. HARRISON & SONS, Leicester (silver-gilt Medal); Messrs. H. CANNELL & SONS, Swenley (Gold Medal); Messrs. H. BARRIE & Co., Rothsay, N. E. (Gold Medal); Mr. H. ECKFORD, Wrentham, Shropshire (Gold Medal); Mr. L. BROWN, Brentwood, Essex (Silver Medal); Messrs. HUNTS & SON, Hounslow (Silver-gilt Medal); Mr. WILLIAMS, Ealing (Silver Medal); Mr. ROBE. SYDENHAM, Tenby Street, Birmingham (Silver-gilt Medal); and Mr. E. W. KING, Coggeshall, Essex (Silver Medal), exhibited collections of Sweet Pea flowers.

Messrs. T. CAMPBELL & Co., Reading Wells Nurseries, Kent, exhibited a plant 18-in. tall, of Retinospora Odontocrippis, with golden-cedrel color foliage.

Messrs. JOHN PECK & SONS, Rempell Park Nurseries, Norwood Road, London, S. E., exhibited a collection of hardy flowers, including Sweet Peas.

Mr. H. J. JONES, Kyevoed Nurseries, Lewisham, exhibited Sweet Peas, excellent plants of Humea elegans, the new Canna, Miss Kate Gray, Campanulas, &c. (Gold Medal).



BULBSHIES: H. M. M. The inflorescence is of full size in September, and may then be removed from the plants.

CORRECTION.—MR. A. PERRY'S EXHIBIT AT CHISWICK: We regret through inadvertence to have omitted to make mention in our report of the fact of Mr. A. Perry, Winchmore Hill, N., having shown Lilies and hardy plants at the Lily Conference, for which he was awarded a Silver-gilt Banksian Medal.

CUCUMBERS GOING OFF SUDDENLY: W. E. So far as we can judge by the scraps of roots sent, the loss of the plants is due to eelworms infesting the roots. The insects forwarded in the box are such as prey on decaying vegetation; and eelworms are of microscopic size, and not visible with the naked eye.

ELM (WEEPING) AND IVY: Nil Desperandum. The Ivy will undoubtedly kill the Elm, and it is a matter for your own decision which you prefer to keep. If the Elm is a symmetrical specimen in perfect health, we should keep it intact, and remove the Ivy entirely.

ETCALYPTIS: B. According to the experience of Mr. Ewbank, Mr. Gaultlett, and others, the most hardy species is E. resinifera.

FUMIGATING PEACH-TREES WITH TOBACCO-PAPER: W. B. The application of smoke was too strong for the plants, hence the damaged foliage. The paper was of good quality, but you used too much of it. At this stage XL-All would have been a safer means of killing aphids, or simply syringing with soapy water.

GALEGA OFFICINALIS: W. B. H. The bicolor variety of this species is by no means new, but is well known in gardens. The grass you have sent is Bromus sterilis.

GRAPES: Constant Reader. The fruit sent is affected by a fungus, Gloeosporium beticola, the "spot" fungus. Remove every affected fruit and destroy it immediately by burning, besides taking care that when cut out of the bunches with the scissors, the berries fall into a tin box or can, and are not allowed to fall on the soil or staging, as in the ripe state of the fungus the spores readily spread all about. Theinery should be well cleaned and painted in the winter if it need it, and the walls lime-washed to a depth of 2 or 4 inches below the ground level, flowers-of-sulphur being mixed with the wash; the soil should be skimmed off 2 to 4 inches in depth. The fungus was figured and described in our issue for December 6, 1890, p. 657.—J. T. The shanking of Grapes may be due to loss of roots, the result of an unwholesome state of the border, to overcropping, or to great loss of foliage in thinning the shoots at one operation.

GREENHOUSE HEATING: Erratum. In the ninth line from the top the words "they seem" should be "I beg;" and nine lines lower down should read "attached thereto," and not attached with a full stop, as printed.

NAMES OF PLANTS: Correspondents not insured in this issue are requested to be so good as to consult the following number.—C. J. P. A myrtaceous shrub. Send when in flower. It is not native.—J. T. S. A species of Statice. Send leaf.—W. G. Paulownia imperialis and Butcher's Broom, Ruscus aculeatus.—T. H. H. Colutea arborescens, the Bladder Scima, Spiraea Lindleyana, Spartium junceum, Spiraea confusa. Specimens were good, but no labels were attached.—J. M. E. L. Melilotus officinalis, and Artemisia vulgaris.—Froggitt, 1. Cypripedium tonsum; 2. Epidendrum alatum; 3. Odontoglossum crispum; 4. Cypripedium barbatum.—P. E. Cattleya Harrisiana,

of a very pretty and uncommon variety, if the white middles of the segments prove constant.—W. H. O. Cypripedium Boxalli.—N. F. P. 1, Corydalis lutea; 2, Coronilla glauca.—A. B. 1, Omphalodes luteifolia; 2, Genista sagittalis.—R. V. & Sons. Phacelia tanacetifolia.

PEAS DISEASED: J. F. S. A similar case to that referred to in December last (p. 405). The fungus which causes downy mildew (Erysiphe) is present. Flowers-of-sulphur dusted on, or Bordeaux Mixture, will check, if applied early. Some varieties, especially late ones, are more liable to attack. Lime added to the soil should benefit.

PINK-COLOURED AND WHITE CARNATIONS: W. J. Godfrey. The blooms sent were those of very pretty, well formed border varieties deliciously fragrant.

PLUM-FRUIT PUNCTURED AND GUMMING: T. W. O. The injury is caused by the larvae of Grapholitha funebrana. Collect all damaged fruits and burn them. You cannot destroy the perfect insect on out-of-door trees, but you might render the fruit tasteless to the female by the use of quassa-wash applied occasionally soon after the fruit is set.

"POPLAR DOGS": E. C. Alderton. The caterpillar that you mention as infesting your Poplars may be that of the Goat Moth or of the Wood Leopard Moth. The caterpillar of the Goat Moth is at the first pinkish. Can you not send specimens for identification. They can be killed by thrusting a piece of stiff wire into the galleries they make.

SEEDLING CARNATIONS: B. K. The flowers have pretty colours, and may be useful and decorative; but in point of size they would compare very unfavourably with existing varieties.

TARRAGON: C. L. Wood. The habit and leafage are rather like the true plant, but the leaves lack the unmistakably pleasant odour of Artemisia Dracunculus. The plant is probably an Artemisia, but it being without flowers, we are unable to say which species.

TOMATO DISEASED: J. McPhail. The pale coloured part of the fruit indicates the immature stage of a fungus, Dactylidium lycopersici. No cure is possible after an attack is made, but the fungus may be kept off by applications of liver-of-sulphur, sulphide of potassium, used at the rate of ½ ounce in one gallon of rain-water. Remove and burn forthwith every diseased fruit.

TOMATOS: W. Y. Case. Kindly send a few fruits for our inspection.

TOMATOS: G. Appleton. Owing to the great heat, the specimens of leaves and stems became dried up, and identification of the fungus was impossible. We would advise that all affected parts, fruits, leaves, &c., be removed with a knife and destroyed forthwith by fire, having done which syringe the plants once a week for three weeks with water, in which ½ oz. of liver-of-sulphur is dissolved per gallon.

VINE LEAVES: Brouett. The leaves now sent have warts on the under surface, which usually indicate excessive moisture from deficient ventilation.

WHITE GREB DESTRUCTIVE AMONG CARROTS, ONIONS, AND OTHER GARDEN CROPS: W. B. Probably the larvae of a weevil. Kindly send specimens.

COMMUNICATIONS RECEIVED.—B. W.—G. B. M.—P. J. K., unfortunately the initials could not be altered.—G. H.—Dr. Edo Dammert.—H. R.—H. W.—Mrs. L. Baden-Baden.—G. N. A. H. K.—E. T.—G. H. P.—E. B.—A. F. C.—J. D. G.—F. J. F.—J. O'H.—E. C.—D. R.—A. P. K.—H. M.—W. M.—A. Hillman.—Digswell.—Rev. E. D. L.—H. S. Mel.—T. H.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

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



NARCISSUS "KING ALFRED," GROWN BY P. I. KENDALL, ESQ.

THE Gardeners' Chronicle

No. 762.—SATURDAY, AUG. 3, 1901.

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DR. AUGUSTINE HENRY.

THE appearance of this gentleman at the Lily Conference held at Chi-wick on July 16, when he gave some valuable particulars of the conditions under which Lilies grow in central and western China, was hailed with delight by those present, most of whom had not previously had an opportunity of seeing him. We now have the pleasure of presenting our readers with a portrait, not a very successful one, we regret to say, but the best we could procure.

Dr. Henry has done so much for botany, and directly or indirectly for horticulture in the far East, that some particulars of his career will doubtless be welcome just now. Augustine Henry is an Irishman, and graduated Master of Arts in the Queen's University in 1878. He is a Licentiate of the Royal College of Physicians of Edinburgh, a Fellow of the Linnean Society, and corresponding member of the Pharmaceutical Society of London. In 1881 he entered the service of the Chinese Maritime Customs as Medical Officer and Assistant, and was stationed at Shanghai for one year. Thence he was transferred to Jehang in the province of Hupeh, on the Yangtze Kiang, about 1,000 miles from the sea, yet only about 70 feet above sea-level. Jehang is situated between 30° and 31° N. lat. and 111° and 112° E. long., almost the eastern limit, in this latitude, of the vast mountainous region of Central Asia. It was here that he began collecting and drying plants in 1885, in the first instance with the object of identifying the Chinese names of economic plants and of vegetable products with their scientific appellations. His first collection was sent to Kew in the spring of 1886, and proved so rich and interesting that he was urged to continue the exploration of a district previously unknown botanically.

In the beginning, he collected and did all the work of drying and labelling with his own hands; but official duties prevented him from doing nearly all that could be done, so he successfully attempted the training of natives to assist him. During 1885, 1886, and 1887, Henry's own collecting was limited to a radius of 10 to 15 miles of Jehang, and to altitudes not exceeding 3,000 ft. One of his most interesting discoveries during these years was *Trapella sinensis*, Oliv., a new genus of Pedaliaceae, figured in Hooker's *Icones Plantarum*, plate 1595.

In April, 1888, he started on a three months' tour in the south-west, and penetrated the province of Szechuen, but nowhere reached an altitude exceeding 6,000 feet. A solitary tree of the remarkable and highly ornamental *Davidia involucreata* was seen on this journey.

Parentetically it may be mentioned here that the summer-heat of Jehang often reaches 100° in the shade; but although it is often bitterly cold in winter, with snow, there is rarely more than 2 or 3 of frost; therefore we must not expect the trees and shrubs of this region to be hardy, except in the warmer parts of the British Islands.

Following the tour in the south-west, a second was made, after a few days' rest, to the north-west, where elevations of 8,000 to 10,000 feet were reached, and an enormous collection of plants was made, rich in new species; for example, there were no fewer than ten new species of Maple. In 1889, Dr. Henry was transferred to the tropical island of Hainan, south of Hongkong, where he remained only three months; yet he made a botanical collection consisting of about 750 numbers. He then (August, 1889) came home on leave. During this holiday he married, and returned with his wife to China in 1891; but his wife was of delicate constitution, and his brief married life was a period of trouble and anxiety.

On his return to China, Henry did not resume medical duties, but became an ordinary Assistant in the Customs; and after a short stay at Shanghai he was sent to the island of Formosa, where he remained until 1895. His collection here was estimated at 1,000 species.

The next change was in 1896 to Mengtze, Yunnan, situated in about 103° E. longitude, and just within the tropics, at an elevation of 4,500 feet, surrounded by mountains rising to between 8,000 and 9,000 feet. The flora of this region is exceedingly rich and varied, and collecting was continued with the greatest ardour.

In 1898 Henry was removed to Szemao to fill the appointment of Assistant, in charge of that port. Szemao lies to the south-west of Mengtze, in about 101° E. longitude, and is nearly as high. Further collections were made here; and in November, 1899, he returned to Mengtze in the capacity of Acting Commissioner. In December, 1900, he came home on furlough.

Having taken a large share in the classification of Dr. Henry's colossal collections of plants, the writer is able to give some interesting particulars of their composition. The aggregate of the numbers exceeds 15,800, and as there are on the average ten specimens under each number, we have the enormous total of 158,000 specimens! So much remains to be done in working out the

collections, that only a very rough approximation can be made of the total number of species they comprise; but I think I am well within the mark in estimating the number of distinct species at 5,000; the number of new species at 500; and the number of new genera at thirty. The two first numbers may prove much too low.

The exigencies of space prevent fullness of detail, but a few of the facts published in various places may be repeated here. For example, the familiar genus *Clematis*, *Rhododendron*, *Lonicera*, *Primula*, *Gentiana*, *Ly-machia*, *Pedicularis*, *Senecio*, and *Saussurea*, are represented in the flora of China, some by upwards of fifty, some by upwards of a hundred species each. Of *Rhododendrons* more than 120 species have been described, and it may be confidently asserted that no part of the Himalayas has a richer flora than the mountains of Western China. *Rubus* and *Rosa* are nowhere else represented by such a wide range of forms. The same may be said of *Jasminum* and *Lonicera*, some of which surpass any of those in cultivation. *Leycesteria sinensis* is a new species, found growing with *L. formosa* and *L. glaucophylla*, the only previously known species. *Hellecia*, the only genus of *Protocera* reaching China, offers at least half-a-dozen new species, including the very handsome *H. grandis*, figured in Hooker's *Icones Plantarum*, plate 2671. It may be mentioned in passing that many of the Chinese novelties are figured in the recent volumes of the publication named.

Of the *Cyrtandraceae* there are probably not less than fifty novelties, many of them charming little plants.

At least sixty kinds of Oak are recorded from China, including many strikingly ornamental ones. Orchids and Lilies abound, and Ferns now number some 300 species; among them a remarkable new genus called *Archangiopteris*, a connecting link between *Angiopteris* and *Danaea*.

Especially remarkable among the new genera are: *Eucommia*, Oliver (Hook., *l.c.*, *Pl.*, t. 1, 1950), belonging to the *Trochodendraceae*, a highly curious group of trees restricted to China, Japan, and Eastern India. *Toa*, Hemsl. (Hook., *l.c.*, *Pl.*, t. 2688), belonging to the *Bixaceae*, and closely allied to *Idesia*, from the same region. *Dipteronia*, Oliver (Hook., *l.c.*, *Pl.*, t. 1898), related to *Acer*, but having pinnate leaves, small flowers in large panicles, and a samaroid fruit with circular wings. *Bretschneidera*, Hemsl. (Hook., *l.c.*, *Pl.*, t. 2708, *ined.*), a highly ornamental tree, which may be described as a Horse Chestnut, with pinnate leaves and racemose flowers. *Hemsleya*, Cogniaux (Hook., *l.c.*, *Pl.*, t. 1822); a member of the *Cucurbitaceae*, having a capsular, calyprate fruit. *Emmenopteryx*, Oliver, Rubiaceae (Hook., *l.c.*, *Pl.*, t. 1823), resembling *Mussaenda* in one lobe of the calyx of the outer flowers growing out leaf-like, and becoming white. *Carolinella*, Hemsl. (Hook., *l.c.*, *Pl.*, t. 2723, *ined.*), near *Primula*, but having a calyprate capsule. *Henrya*, Hemsl. (Hook., *l.c.*, *Pl.*, t. 1971), *Asclepiadaceae*, of more botanical than horticultural interest. *Trapella*, Oliver (Hook., *l.c.*, *Pl.*, t. 1595), a singular amphibious genus of the *Pedaliaceae*. *Petrocosmen*, Oliver, a lovely genus of stemless plants belonging to the *Cyrtandraceae*, of which four species are figured (Hook., *l.c.*, *Pl.*, t. 1716; 2110; 2599, and 2600). *Hancea*, Hemsl., *Labiate* (*Journal. Linn. Soc.*, xxvi., t. 6), very distinct, and reminding

one of the Acanthaceae rather than of the family to which it actually belongs. Saruma, Oliver (*Hook. Ic. Pl.*, t. 1835), closely allied to A-sarum, but distinctly caulescent, and the flowers are furnished with petals.

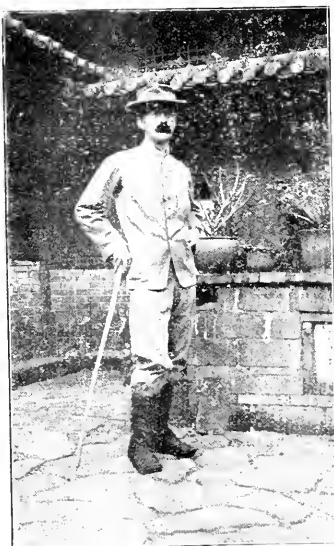
Dr. Henry is now at Kew engaged in arranging his plants in sets for distribution to a few of the principal botanical establishments of the world. It is to be hoped that he will soon publish from his vast stores of knowledge of the vegetation of China, and of a number of other subjects connected with that wonderful country. That is the wish of at least one of those who enjoy the profit and pleasure of being personally acquainted with a gentleman who has accomplished so much towards the botanical exploration of China. *W. Botling Hensley.*

TREE AND PLANT LABELS.

From time to time much has been written about these, mostly as to which is the best material to use, the size, form, and general usefulness—but with all there appears always to have been a consensus of opinion that it is necessary to have a name-label of some sort, though it never has been quite decided as to which is "the best." I now intend to show what is not only the very worst, but where much loss of time, and somewhat of vexation might be at least lessened. During a prolonged life it has been my good fortune to have been a lover of arboriculture and horticulture, and in that respect to have done much in "planting," consequently have purchased both large and small quantities of trees, shrubs, and plants, besides fruit-trees. Well! it may be said, "What has all this to do with labels?" Why, this. Fifty years ago, when buying fruit-trees, they were sent out with labels that were so far lasting as to be serviceable for some months, being mostly of wood, and then also the trees were cheaper, dwarfs being 6s. to 8d., and standards 1s. each. Now the price is more, and the labels are of a most cheap and perishable kind, so much so in most cases that unless they are re-labelled when planted, the chances are this, their identity will be lost, or at least until the fruiting time. This remark also applies to plants, herbaceous and others. Some nurserymen, however, seem to think that a label ought to be in a degree durable, marking their trees with tough paper-slips and the names printed on; while others, forgetful or careless of the label requirements, use cardboard of such texture as to become mere pulp by the first shower; while others, and this more lately, use strong paper-slips, but written on with such fugitive ink that though the labels remain intact they are perfectly clear of any writing, and this often in a very few days. Among my herbaceous plants are many such at the present time, which are shown to my horticultural friends as specimens of "progress" in these enlightened days.

Now, what I am coming to is this. Why cannot the nurseryman when he is sending out his orders, label each with a permanent label, and so let the one act be that of utility and lasting use? Instead of which, as matters are, when one is planting, fresh labels have to be got and written, the travelling ones taken off, and the permanent ones substituted. This double labour should be avoided, and the customer put to as little inconvenience and trouble as possible. This I take it is the proper and business-like way of doing things, not the slipshod style now adopted, of useless labelling, beyond that of present identification. Permanent name appendages would also simplify planting, and make it at least more pleasure-

able than as now it is tedious. Why not have either wood or zinc in a form easily wired loosely on the tree, and written on either in indelible ink or with an indelible ink pencil? And so with the herbaceous plants. Why not have nice white wooden labels so written that when the new comers are garden-placed, the label can be inserted in the soil, and then so on to the next and next. True it may be argued, and this with some reason, that you know what you have ordered can prepare and write your labels beforehand, and then change the nurseryman's for yours. Yes! this could be done, doubtless, and probably is, but if you have a hundred or two they get mixed, and each has to be sought for as wanted, and thus very much valuable time is lost. Whereas if the nurseryman on sending out his trees or what not, properly puts on permanent labels, all this secondary use of time, which is lost, would be saved and the planting perfected at once. It is just as easy to tie on one kind



DR. AUGUSTINE HENRY. (See p. 85.)

of label as another, and therefore it is merely a matter of cost, which might be slightly more, yet of such a trifling sum as to render it unworthy of consideration in the face of the increased utility. I think that now the matter has been brought to the notice of the trade, they will at once see that it is "progress," that it is a step in the right direction, and—take it, *Harrison Weir, Appleton, Kent.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA WARSCWICZII "J. RICHARDSON."

A FLOWER of this richly-coloured variety, which was shown by J. Richardson, Esq., Hale Croft, Hale, Altrincham (gr.), Mr. W. Jenkins, at the meeting of the Manchester Orchid Society, on Thursday, July 18, has been kindly forwarded by that gentleman. The flower, which is a large and fine one, reminds to mind the natural hybrid *C. × Hardyana*, the rich colour of the lip being the equal of that variety. The interior of the base of the lip is of a glowing light purple,

and reddish lines on a light ground radiate towards the centre. On each side of the middle area of the lip is situate a large yellow blotch on a cream-white ground, and which distinctly indicates true *Cattleya Warscewiczii*. The large front lobe is of a ruby-purple tint, the edges of the side lobes and their exterior forming the tube, being as darkly-coloured as the front, which constitutes its chief distinguishing character.

CYPRIPEDIUM × LEEFANG-CHAMBERLAINIANUM.

A bloom of the first to appear in a number of plants raised by Mr. T. Stafford, gr. to F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, between *Cypripedium × Lecanum*, Wells' variety, and C. Chamberlainianum, has been received. The upper sepal is white, with reflexed edges, the lower third tinged with purple, and purplish lines follow the veins to within one-third of its entire length. The lower sepals are whitish, and have a few purple spots at their bases. The petals are ligulate and ciliate, 2½ inches in length, whitish tinged and veined with purple; lip whitish, with bright yellow side lobes folded under the bronzy-yellow staminode, and the pouch is ringed with light purple. Other crosses with some forms of *C. × Lecanum* and *C. Chamberlainianum*, have been obtained by several raisers.

CATTLEYA GASKELLIANA.

The beauty and usefulness of this free-growing variety of *Cattleya labiata* is well shown in the plant-houses of T. F. Blackwell, Esq., The Cedars, Harrow Weald, where many fine specimens of the plant, which have been well cultivated by his gardener, Mr. J. Dinsmore, for many years, are now in bloom. Each plant bears a number of large blooms, varying in the tint of their sepals and petals from bluish-white to bright rose colour; and the lips display much colour variation. There are arranged along with these plants *Cattleya Mendellii*, *Epidendrum vitellinum*, *Coeliodia vulcanica*, *Miltonia vexillaria*, *Odontoglossum crispum*, and other *Odontoglossums*; among which the graceful *O. aspidochilum*, Lchm., is remarkable for the profusion of its flower-spikes, a dozen or more of which spring from quite small plants. *Oncidium Kramerii*, several *Dendrobiums* and *Anturiums*, assist to make a fine display. Orchids are grown for decorative purposes at the Cedars like other stove and greenhouse plants, and the species from hot climates are arranged with *Korras*, *Gardenias*, &c., with very satisfactory results. Mr. Dinsmore grows a limited number of all the forms of *Cattleya labiata*, and as each section flowers at a different season, there are some of them in bloom at almost all seasons of the year. *C. Gaskelliana* and the autumn-flowering *C. labiata* are found to be the easiest of all to grow, and bloom profusely.

"LINDENIA."

The July number of this periodical contains coloured illustrations and descriptions of the following plants:—

LILIA LINDENIANA, Veleh, t. DC. XLII.—The *Brassica-Cattleya Lindeniana* of *British Chron.*, 1898, 1, p. 437. Flowers 4 inches across; segments binate, white; lip ovate at the base, expanding into a flat ovate-acute rosy-lilac anterior lobe.

ODONTOGLOSSUM BRYCKWANI, Hort., t. DC. XLII.—A conical cross between *O. Bellii* and *O. Hartmanni*. Flowers about 4 inches in diameter; segments binate, ligulate, undulate, primrose-yellow blotched with purplish-brown; lip oblong-acute, similarly dotted.

ONCIDIUM STELLIGERUM, var. **ENSSETI**, t. DC. XLII.—Flowers across 2½ inches across; segments lilac or lilac-yellow, with brown spots; base of lobes of lip rounded, yellow; anterior lobe ovate-acute, rosy-lilac.

ZYGOPETALUM × CLAYI, t. DC. XLII.—A hybrid between *Z. crinitum* and *Z. maculatum*, raised by Clay, and described by Reichenbach in *Gard. Chron.*, vol. p. 681. The flowers are nearly 3 inches across; the perianth segments are green, heavily barred with purplish-brown; the broad-expanded lip rich violet.



FIG. 30.—SWEET PEAS OF THE CENTURY. (SEE TEXT, P. 91.)

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," INDICATE THE QUALITY.

* FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 91

COUNTY	APPLES.	PEARS.	PLUMS.	CHERRILS.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND -									
0, Scotland, N.									
CAITHNESS	Over: good	Average: good	.....	Average: very good	.....	Average: very good	Over: very good	.....	W. F. MacKenzie, Thurso Castle Gardens, Thurso
MORAYSHIRE	Under	Average: Over	Average	Average	Average	Average	Over	.....	D. Cunningham, Barnaway Castle Gardens, Forres
ORKNEY	Under: good	Average: good	.....	Average: very good	.....	Over: very good	Over: very good	.....	Thos. Macdonald, Balfour Castle Gardens, Kirkwall
SUTHERLANDSHIRE	Under	Under	Under	.....	.....	Average	Average: good	Average	D. Melville, Dunrobin Castle Gardens, Golspie
1, Scotland, E.									
ABERDEENSHIRE	Under: good	Under: good	Over: good	Under: bad	.....	Average: good	.....	.....	John Forrest, Haddo House Gardens, Aberdeen
	Under: bad	Under: bad	Average: good	Average: good	.....	Average: good	Over: very good	.....	James Grant, Rothie Norman Gardens, Rothie
	Under	Under	Under	.....	.....	Average: good	Average	.....	John Brown, Delgaty Castle Gardens, Turriff
	Under	Average	Average	Under	Under	Over	Over: good	.....	Simon Campbell, Eyvie Castle Gardens,
BANFFSHIRE	Average: good	.....	.....	Under: good	.....	Average: very good	Over: very good	.....	John M. Trump, Balmoral Castle Gardens, Ballater
	Under	Under	Under	Under: bad	Average	Average: very good	Over: very good	.....	J. Fraser Smith, Cullen House Gardens,
BERWICKSHIRE	Under: good	Under: good	Average: good	Average: good	Average: very good	Over: very good	Over: very good	Over	James Gemmell, Ladykirk Gardens, Berwick-on-Tweed
	Under: good	Average: good	Under: good	Average: good	.....	Average: good	Average: good	.....	W. Cairns, The Hired Gardens, Coldstream
CLACKMANNANSHIRE	.....	Over: very good	Average: good	Over: very good	Average: good	Average: very good	Over: good	.....	James Trauside, Blackadder Gardens, Edrom
	Average	Average	Under	Average	Under	Average	Over: very good	.....	A. Kirk, Norwood Gardens, Alloa
FIFESHIRE	Average: good	Under	Under: good	Average: good	Under	Over: very good	Over: very good	.....	Wm. Henderson, Balbirnie Gardens, Markinch
	Over: good	Average: good	Under: very good	Average: good	Under: good	Average: good	Over: good	.....	William Williamson, Tarvit Gardens, Cupar
FORFARSHIRE	Average: good	Under: good	Average: good	Average: very good	.....	Over: very good	Over	.....	W. McDowall, Brochin Castle Gardens, Thos. Wilson, Ginnis Castle Gardens, Ginnis
HAMPSHIRE	Under: very good	Average: very good	Over: very good	Average: good	Under: very good	Average: good	Over: good	.....	R. P. Brotherton, Tynninghame Gardens, Protonkirk
KINCARDINESHIRE	Over: very good	Over: very good	Under: very good	Average: good	Over: very good	Over: very good	Over: very good	.....	Thomas H. Cook, Gosford Gardens, Longniddry
	Under: good	Under: good	Average: good	Under: good	.....	Average: very good	Average: very good	.....	John M. Brown, Blackhall Castle Gardens, Rathenay
LINLITHGOWSHIRE	Average	Average	Under	Average: good	.....	Over	Over: good	.....	William Smith, Fasque Gardens, Lawrencekirk
	Average	Average	Under	Under	Under	.....	Average	Under	Jas. Smith, Hoploom House Gardens, South Queensferry
MIDLOTHIAN	Average: good	Average: good	Average: good	Under: good	Under: good	Over: good	Over: very good	Average: good	James Whytock, Dalkeith Gardens
	Average: good	Under: bad	Average: good	Average: very good	Under	Average: very good	Average: very good	.....	Daniel Kidd, The Gardens, Carberry Tower, Musselburgh
PEEBLES	Under	Over	Average: good	Average: very good	.....	Over: bad	Over: very good	.....	Wm. McDonald, Gartrona, Innerleithen
	Average: good	.....	Over: very good	Over: very good	Under	Over: very good	Average: good	.....	Molecul McIntyre, The Glen Gardens, Innerleithen
PERTHSHIRE	Average: very good	Average	Under: good	Average	Under	Over: very good	Over: very good	.....	J. Farquharson, Kinfauns Castle Gardens, Perth
	Average: bad	Over: good	Under	Average	.....	Average	Over: good	.....	George Croucher, Ochiltree Gardens, Crieff
	Very good	Average	.....	Over	.....	Average	Average	.....	John Robb, Drummond Castle Gardens, Crieff
	Average: good	Under	Average: good	Under: good	Average: good	Average: good	Over: good	.....	James Ewing, Castle Menzies Gardens, Aberdeen
6, Scotland, W.	Average: good	Average: good	Average: good	Over: good	Average: good	Over: very good	Average: very good	.....	Thomas Lunt, Keir Gardens, Dunblane
	Average: good	Average: good	Average: good	Over: good	Average: good	Over: very good	Average: very good	.....	.....
ARGYLLSHIRE									
ARGYLLSHIRE	Under	Under	Under	Average	.....	Average: small	Average: small	.....	G. Taylor, Castle Gardens, Inverary
	Under: good	Over: good	Average: very good	Over: very good	Under: bad	Average: good	Average: good	Under	D. S. Melville, Poltalloch Gardens, Lochlinnoch
AYRSHIRE	Average	Over	Average	Average	.....	Average: good	Over: very good	Over	Benny Scott, Turloch Gardens, Aros, Isle of Mull
	Average: good	Over: good	Average: good	Average: good	Over: extra good	Over: good	Over: good	Average: good	D. Buchanan, Bargany Gardens, Ayr
BUTHESHIRE	Average	Average	Under	Over	.....	Over: very good	Over: good	.....	William Priest, Eglington Castle Gardens, Irvine
	Over	Over: good	Over: good	Average: good	Under	Over: very good	Over: good	.....	Thomas Gordon, Ewanfield Gardens, Ayr
DUMFRIES	Average	Average	Over	Over	Under	Over	Under	.....	David Murray, Culzean Gardens, Maybole
	Average: good	Average: good	Over: good	Average: good	Under	Average: good	Under: bad	.....	M. Heron, Mount Stuart House Gardens, Rathesay
DUMFRIES	Average: good	Average: good	Over: good	Average: good	Under	Average: good	Average: good	Under	George McKay, Balloch Castle Gardens, Balloch
	Average: very good	Under	Over	Average	.....	Over: very good	Over: very good	.....	D. Stewart, The Gardens, Knockderry Castle, Cove
DUMFRIES	Over: very good	Under	Under	Over: very good	.....	Over: very good	Average: good	.....	David Inglis, Drumding Castle Gardens, Thornhill
	Average: good	Under	Average	Over: good	Under: good	Under	Over: good	.....	J. Toppinart, Haddon Castle Gardens, Feederkin
DUMFRIES	Average: good	Under: good	Average: good	Under: bad	.....	Average: good	Average: very good	.....	R. Wishart, Burnfoot Gardens, Langholm
	Average: good	Under: good	Average: good	Under: bad	.....	Average: good	Average: very good	.....	.....

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.									
DUMFRIES-SHIRE	Under, good	Under, good	Average, good	Over, very good	Average, good	Over, very good	Average, very good	Average, good	John Mackinnon, Terraces, Dumfries.
	Under, good	Under, good	Under, bad	Over, very good	Under, good	Over, very good	Over, very good	Under, good	James Melnoid, Dalrymple, Lockerbie.
LANARK-SHIRE	Average, good	Under, good	Average, good	Average, good	Under, good	Over, good	Over, good	Under, good	James Bell, Castlebank Gardens, Bathgate.
NAIRN-SHIRE	Under, good	Under, good	Average, good	Average, good	Under, good	Over, good	Over, good	Under, good	John Anderson, Dalme Rose Gardens, Golterfield.
RENFREWSHIRE	Average, good	Average, good	Under, good	Average, good	Under, good	Average, good	Average, good	Under, good	John Melvin, Blythswood Gardens, Renfrew.
	Over, good	Under, good	Over, very good	Under, good	Under, good	Over, good	Under, good	Under, good	Thomas Lint, Ardowan Gardens, near Greenock.
	Under, good	Under, good	Under, good	Average, good	Under, good	Average, good	Under, good	Under, good	Wm. Hutchinson, Eastwood Park Gardens, Portmouck.
STIRLING-SHIRE	Average, good	Average, good	Average, good	Average, good	Under, good	Under, good	Average, good	Average, good	Alex. Crosbie, Buchanan Castle Gardens, Drymen.
WIGTON-SHIRE	Average, good	Average, good	Over, very good	Under, good	Under, good	Over, very good	Over, very good	Under, good	John Bayden, Dumfries Gardens, Dumfries.
	Under, good	Average, good	Average, good	Average, good	Under, good	Average, good	Average, good	Under, good	James Day, Galloway House Gardens, Garthtown.
ENGLAND—									
2, England, N.E.									
DURHAM	Under, good	Average, good	Under, good	Average, good	Under, good	Under, good	Average, good	Under, good	Robert Draper, Seabam Hall, Seabam Harbottle.
	Under, good	Average, good	Average, good	Average, good	Over, very good	Over, very good	Over, very good	Under, good	James Noble, Woodburn Gardens, Borthington.
NORTHUMBERLAND	Over, good	Average, good	Under, bad	Under, good	Over, very good	Average, good	Average, good	Under, good	Percy S. Follwell, Alnwick Castle Gardens.
YORKSHIRE	Under, good	Under, good	Under, good	Average, good	Average, good	Average, good	Over, good	Under, good	John McCalland, Ribston Hall Gardens, Wetherby.
	Under, good	Average, good	Under, good	Average, good	Under, good	Average, good	Average, good	Under, good	Bailey Waddell, Bardsall Gardens, York.
	Average, good	Average, good	Under, good	Average, good	Under, good	Over, good	Over, good	Under, good	G. Bailey, Wentworth Castle Gardens, Barnsley.
	Average, good	Under, good	Average, good	Over, good	Over, good	Over, good	Over, good	Under, good	J. Simpson, Studfield House, Sheffield.
	Average, good	Average, good	Under, good	Average, good	Average, good	Average, good	Under, good	Average, good	John Small, Farnley Hall Gardens, Otley.
	Under, good	Average, good	Under, good	Average, good	Average, good	Average, good	Under, bad	Average, good	J. S. Lupton, Wiganthorpe, York.
	Under, good	Average, good	Under, good	Average, good	Under, good	Average, good	Average, good	Average, good	John Allison, Dalton Holme Gardens, Beverly.
	Under, bad	Under, good	Under, bad	Average, good	Under, good	Over, very good	Over, very good	Under, good	A. E. Sutton, Castle Howard Gardens, Welburn.
	Under, good	Over, good	Average, good	Over, good	Over, good	Over, good	Over, good	Over, good	S. Kesteven, Thirkley Park Gardens, Thirkley.
	Under, good	Over, good	Average, good	Over, good	Over, good	Over, good	Over, good	Over, good	Clas. Simpson, Newby Hall Gardens, Ripon.
3, England, E.									
CAMBRIDGE-SHIRE	Under, good	Under, bad	Average, good	Over, good	Under, good	Average, good	Over, very good	Under, bad	R. Alderman, Babraham Gardens, Cambridge.
	Under, bad	Under, bad	Under, good	Average, bad	Under, bad	Average, good	Average, very good	Under, good	Walter Parkin, Dalham Hall Gardens, Newmarket.
HUNTINGDON-SHIRE	Average, good	Over, good	Average, good	Average, good	Average, good	Under, good	Average, good	Average, good	Wm. Hy. Gascoigne, Croxton Park Gardens, St. Neots.
ESSEX	Average, good	Average, good	Under, good	Average, good	Average, good	Over, very good	Over, very good	Under, good	Henry Fisher, Easton Lodge Gardens, Danbury.
	Under, good	Average, good	Average, good	Average, good	Under, good	Average, good	Average, good	Under, good	H. W. Ward, Lane House, Rayleigh.
	Under, bad	Under, good	Under, good	Average, good	Under, good	Over, good	Average, good	Average, good	W. R. Johnson, Stanway Hall Gardens, Colchester.
LINCOLNSHIRE	Under, good	Under, good	Under, good	Average, good	Average, good	Average, good	Over, very good	Under, good	James Machin, Bramwoods, Great Bardby.
	Under, good	Under, good	Under, good	Average, good	Average, good	Average, good	Over, good	Under, good	H. Under, Harlaxton Manor Gardens, Grantham.
	Average, bad	Under, good	Under, good	Average, good	Average, good	Average, good	Over, good	Average, good	John Rowlands, Manor Gardens, Enderby.
NORFOLK	Under, bad	Under, good	Under, good	Average, bad	Over, very good	Over, very good	Over, very good	Average, good	James D. Coward, Haverholme Gardens, Sheringham.
	Under, bad	Under, good	Under, good	Average, good	Average, good	Average, good	Over, very good	Over, good	E. C. Parslow, Shadwell Court Gardens, Thetford.
	Under, bad	Average, good	Average, good	Over, good	Over, good	Over, good	Average, good	Under, good	Wm. Allen, Gunton Park Gardens, Norwich.
SUFFOLK	Under, good	Under, good	Under, good	Average, good	Under, good	Average, good	Average, good	Under, good	J. J. Wallis, Orwell Park Gardens, Ipswich.
	Under, good	Average, good	Average, good	Over, good	Average, good	Over, good	Over, very good	Average, good	H. Fisher, Flixton Hall Gardens, Bungay.
4, Midland Counties									
BEDFORD-SHIRE	Under, bad	Average, good	Under, bad	Under, bad	Over, good	Average, good	Over, very good	Average, good	Henry Nimmo, Cranfield Court Gardens, Woburn Sands.
	Under, good	Average, good	Average, good	Over, good	Average, good	Average, good	Average, good	Average, good	H. W. Nutt, Hetwick, Ampthill.
	Under, bad	Under, good	Under, good	Over, good	Under, good	Over, good	Over, good	Under, good	Richard Calvert, Woburn Abbey Gardens.
	Under, good	Average, good	Under, bad	Average, very good	Over, very good	Over, good	Over, good	Average, good	George Markday, West Park Gardens, Ampthill.
BUCKINGHAM-SHIRE	Under, bad	Under, good	Average, good	Average, very good	Under, bad	Over, good	Average, good	Average, good	James Wood, Heddon Park, Bourne End.
	Average, good	Under, good	Under, good	Over, good	Under, good	Average, good	Over, very good	Average, good	John Fleming, Wyham Park Gardens, Slough.
	Under, good	Under, good	Average, good	Over, good	Average, good	Average, good	Average, good	Over, good	Chas. Page, Droppare Gardens, Maidenhead.
	Under, good	Average, good	Under, good	Over, good	Average, good	Average, good	Average, good	Under, good	George Miles, Westcombe Abbey Gardens, High Wycombe.
	Under, good	Average, good	Average, good	Over, good	Average, good	Over, good	Over, good	Under, good	W. Bodley Warren, Aston Clinton Gardens, Tingi.
	Under, bad	Average, good	Average, good	Average, good	Average, good	Average, good	Average, good	Under, good	J. Smith, Montmore Gardens, Leighton Buzzard.
CHESHIRE	Under, good	Over, good	Under, good	Over, good	Under, good	Over, good	Over, good	Under, good	W. C. B. Moxton, Hall Gardens, Congleton.
	Average, good	Average, good	Average, good	More than average	Under, good	Average, good	Over, good	Average, good	C. Walley, Dod (Rev.), Edge Hall, Macclesfield.
	Average, good	Over, good	Over, good	Over, good	Under, good	Over, good	Over, good	Under, good	William Kipp, Walton Lea Gardens, Warrington.
	Under, good	Average, good	Under, good	Average, good	Over, very good	Over, very good	Over, very good	Under, good	Charles Black, Cheshamley Castle Gardens, Macclesfield.
	Under, good	Average, good	Under, good	Average, good	Average, good	Average, good	Average, good	Under, good	Robt. McKellar, Vasey Hall Gardens, Cheshire.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES	PEARS	PLUMS	CHERRIES	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NCTS	NAME AND ADDRESS.
4, Midland Counties.									
CHESHIRE	Average: good	Over: good	Average: very good	Average: good	Average: good	Over: good	Average: very good		X F. Barnes, Eaton Gardens, Chester
DERBYSHIRE	Under: good	Under: good	Average: good	Average: good	.....	Average: good	Average: good		J. Chester, Chatsworth Gardens, Chesterfield
	Under: bad	Over: bad	Under: bad	Over: good	.....	Average: good	Average: very good		W. C. Tallack, Shipley Hall Gardens, Derby
	Under	Average	Under	Average	Under	Average	Over: very good	Average	T. Keebley, Darley Abbey Gardens, Derby
HERTFORDSHIRE	Average: good	Over: very good	Under: good	Average: very good	.....	Over: very good	Over: very good	Average: good	F. C. Mills, Glossop Hall Gardens, Glossop
	Under: good	Under: good	Under	Average: good	Average: good	Over: good	Over: very good	Under	Thomas Bosley, Lane House Gardens, Kings-Walden, Hetham
	Under	Under	Under	Average	Average	Average	Average	Under	W. B. Mottle, Frythesden Gardens, Berkhamsted
	Under: good	Average: good	Over: very good	Over: good	Over: very good	Over: very good	Average: good	Under	C. E. Martin, The Hoo Gardens, Welwyn
LEICESTERSHIRE	Under: good	Under: good	Average: good	Average: very good	Average: good	Over: good	Average: good	Under	Thos. Rivers & Son, Sawbridgeworth
	Under	Under	Under	Under	.....	Average: very good	Average: very good	Average	Edwin Hill, Tring Park Gardens, Tring
	Under	Average	Under: very good	Under	.....	Average: very good	Average	Average	George Norman, Hatfield House Gardens, Hatfield
	Under: good	Average: good	Under: good	Average: good	Average: good	Over	Over	Walnuts: good	George Milford, Erection Lodge Gardens, Melton Mowbray
NORTHAMPTONSHIRE	Under: bad	Average: good	Under: good	Average: good	Over: good	Over: very good	Over: very good	Under: bad	Daniel Roberts, Prestwood Gardens, Longborough
	Under: bad	Average: very good	Average: good	Average: good	Over: good	Over: good	Over: very good	Under: bad	W. H. Rivers, Belvoir Castle Gardens, Rothham
	Under: good	Average: good	Under: bad	Average: good	Over: very good	Over: very good	Over: very good	Average	Wm. Duncum, Bosworth Hall Gardens, Rugby
	Under: bad	Average: good	Under: good	Average: good	Over: very good	Over: very good	Over: very good	Walnuts: over	H. Kempshall, Lamport Hall Gardens, Northampton
NOTTINGHAMSHIRE	Under: good	Average: good	Under: good	Average: good	Over: very good	Over: good	Average: good	Average	Robert Johnston, Wakefield Lodge Gardens, Stony Stratford
	Under: bad	Over: good	Over: bad	Over: good	Average: good	Over: good	Average: good	Average	H. Turner, Fine-shade Abbey Gardens, Stratford
	Under: good	Average: very good	Average: very good	Over: good	Over	Over: very good	Average: good	Average	James Sheehan, Whittlebury Lodge Gardens, Northampton
	Under: good	Average: good	Under: good	Under: good	Under: good	Over: good	Average: good	Over: good	Amos Earl, Holme Pierrepont Hall Gardens, Nottingham
	Under	Average	Under	Average: good	Average	Over: good	Over: good	Under	J. Lyon, Home Farm, Ossington, Newark
	Average: good	Average: good	Under: good	Average: very good	Average: good	Over: very good	Over: very good	Under: bad	William Robertson, Thoresby Park Gardens, Ollerton, Newark
OXFORDSHIRE	Under: good	Average: good	Under: good	Average: good	Over: good	Over: good	Over: very good	Under: good	J. Roberts, Welbeck Gardens, Work-park
	Average: bad	Under	Under	Very few grown in this locality	Over	Over: good	Under: bad		J. R. Pearson & Sons, Lowdham, Notts
	Average	Under	Average	Average	Average	Over	Over	Over	A. McCulloch, Newstead Abbey Gardens, Nottingham
	Under: bad	Average: good	Average: good	Over: very good	Over: good	Average: good	Over: very good	Average: good	P. O. Knowles, Friar Park Gardens, Bentley-on-Thames
SHROPSHIRE	Average: good	Average: very good	Under: good	Average: good	Over: good	Over: very good	Over: very good	Average	John A. Hall, Shipdake Court Gardens, Bentley-on-Thames
	Under: good	Under: good	Under	Over: good	Over	Average	Average	Average	A. J. Long, Wyddol Court Gardens, Reading
	Under: good	Under: good	Average: good	Average: good	.....	Over: very good	Average: good	Under	James A. Smith, Sarsden House Gardens, Clipping Norton
	Under: good	Average: good	Average: good	Average: good	Average: good	Over	Over: good	Over	A. S. Kemp, Broadway, Shifnal, Salop
STAFFORDSHIRE	Under	Over	Under	Average	Under	Average	Over	Over	James Louden, The Quinta Gardens, Chink
	Under: good	Average: good	Average: good	Average: good	Average: good	Average	Average	Average: good	J. Hopwood, Shrewsbury
	Under: bad	Under	Under	Over: good	Under: good	Over: good	Over: very good	Under: good	T. Bamberman, Blithfield Gardens, Rugby
	Under: bad	Under	Under	Over: good	Over: good	Over: good	Over: very good	Average: good	C. H. Green, Enville Gardens, Stourbridge
WARWICKSHIRE	Average: good	Average: good	Under: good	Average: good	Average: good	Average: good	Average: good	Average: good	C. V. Bayliss, Sloughborough Gardens, Slough
	Under	Under	Average	Average	Under	Average	Average	Average	Wm. Woodgate, Rotherstone Hall Gardens, Burton-on-Trent
	Under: good	Over: good	Average: good	Average: good	Average: good	Over: very good	Over: very good	Under	Ed. Graham, Allon Towers Gardens, Cheddoke
	Under: good	Under: good	Under: bad	Average: good	Under: good	Over: very good	Over: very good	Under	J. R. Chumbley, Langmore Gardens, Burton-on-Trent
	Over: good	Over: very good	Under: good	Average: good	Under: good	Over: very good	Over: very good	Average: good	H. T. Martin, Stoneleigh Abbey Gardens, Churchworth
	Under	Under	Under	Average: good	Over: good	Average: good	Over: good	Average: good	A. D. Christie, Ragley Gardens, Alcester
DORSETSHIRE	Average: good	Over: very good	Average: good	Over: good	Average: good	Average: good	Over: very good	Walnuts: over: very good	W. Miller, Barks-well, Coventry
	Average: good	Under: very good	Average: good	Over: very good	Average: good	Average: good	Over: very good	Walnuts: over: very good	Thomas Masters, Estate Steward, Lower Sluck Knigh, Bventry
	Average: good	Under: good	Average: good	Over: good	Average: good	Average: good	Over: very good	Walnuts: over: very good	Wm. Masters, Weston House Gardens, Sutton-on-Stour
	Average: good	Under: bad	Under: good	Over: very good	Under	Average: good	Average: good	Average	Thos. Denny, Down House Gardens, Blundford
5, Southern Counties.									
BERKSHIRE	Under	Average	Average	Over	Over: good	Over	Average	Average	J. Howard, Benham Park Gardens, Newbury
	Under	Under	Average: good	Average	Under	Over: good	Over: very good	Under	William Fife, Lockinge Gardens, Wantage
	Under: good	Under	Under	Average	Under: good	Over: good	Under: bad	Over: good	Thos. Tibb, Holme Park Gardens, Sonning
	Under	Average	Average	Over	Average	Over	Average	Under	James Coombes, Englefield Gardens, Reading
	Under	Average	Average	Average	Average	Over	Average	Under: Walnuts over	Robt. Fenn, Sulhamstead, near Reading
	Average	Under	Under	Average	.....	Average: very good	Average: very good	Average	James Sheehan, Rosehill House Gardens, Bentley-on-Thames
	Under	Average: good	Under	Over: good	Over	Over: very good	Over: good	Average	W. Pope, Highclere Castle Gardens, Newbury
	Average: good	Over: very good	Average: good	Over: very good	Average: good	Average: good	Over: very good	Walnuts: over: very good	Wm. Thomas, Royal Gardens, Windsor

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY	APPLES.	PEARS	PLUMS	CHERRIES	APRICOTS	SMALL FRUITS	STRAW-BERRIES	NUTS.	NAME AND ADDRESS
5. Southern Counties.									
DORSETSHIRE									
	Average	Under	Under; good	Under; bad	Average; good	Average; good	Over; very good	Average	Fou Campbell, Kingston House Gardens, Dorchester
	Under	Under	Under	Average; good	Average; good	Over; very good	Average	Under	T. Tilton, Castle Gardens, Shaftesbury
HAMPSHIRE									
	Under; good	Average; good	Average; good	Average; good	Average; good	Over; good	Average; good	Average	Arthur Lee, Palace House Gardens, Bournemouth
	Under; good	Average	Over	Over; very good	Under; good	Over; very good	Average; good	Over	E. E. Molyneux, Swanton Park, Bishops-Waltham
	Average; good	Under	Average; good	Moribless; over; good, others	Under; good	Over; good	Average; good	Average	A. G. Nichols, The Gardens, Stratfield-Sayle, Mortimer, R.S.O.
	Under; bad	Average	Over; very good	Average	Average; good	Over; very good	Over; very good	Average	James Wasley, Shefield Man of gardens, Basingstoke
	Under; bad	Under	Average	Average; good	Average; good	Over; very good	Over; good	Average; good	J. Bowyer-man, Hawkwood Park Basingstoke
		Under; thin	Under; thin		Over; good	Over; extra good	Average		Norfolk Kneller, Malshanger Park, Basingstoke
KENT									
	Average	Average	Average	Average; good	Average; very good	Average; good	Average; very good	Average	W. Jorran, Preston Hall Gardens, Aylesford
	Under; good	Under; good	Under; good	Over; very good	Average; good	Over; very good	Over; very good	Under	H. Elliott, Waldenese gardens, Sevenoaks
	Under	Average	Under	Over	Under	Over; except Black Cherrits	Average	Under	G. O. Buxford, Royal Nurseries, Maidstone
	Under	Average	Average	Over	Under	Over; Black Currants; under; bad	Over; good	Average	George Butt, Luffingsstone Castle gardens, Dartford
	Average; good	Average; good	Under; bad	Over; good	Average; good	Average	Average; good		Fred Moore, Blendon Hall gardens, Bevis
	Under	Under	Over; good	Over; good	Over; very good	Over; very good	Average; good		Wm. Lewis, East Sutton Park, Maidstone
	Average	Average	Average	Over; good	Over; good	Over; good	Over; good	Under	G. O. Fenell, The Gardens, Fairlawn, Tonbridge
	Under; good	Average; good	Average	Over; very good	Over; good	Over; fair	Over; fair	Under; a bad failure	R. Clapton, Menworth, Maidstone
	Under	Under; bad	Under	Over; good		Average	Average	Under	George Lockyer, Mereworth, Maidstone
	Under; good	Average; good	Under; bad	Over; good		Average; good	Average	Under	G. O. Woodward, Earlsdon Court Estate Gardens, Tipton, Maidstone
MIDDLE-SEX									
	Under; good	Average; good	Under	Average; good	Over; good	Over; good	Over; good	Under	Wahurs, Twickenham
	Average; good	Over; very good	Over; good	Average; good	Over; good	Over; very good	Over; very good	Under	S. F. Wright, Royal Horticultural Society's Gardens, Chiswick
	Under	Under	Average	Average; good	Under	Average; very good	Average; good	Under	H. Markham, Woodham Park, Epsom
	Over; good	Average; good	Under; good	Over; very good	Under; good	Over; good	Over; good		James Hadon, Cranbury Home Gardens, Acton
	Average	Average	Average	Average; good		Average; good	Average	Average	William Bates, Cross Deep Gardens, Twickenham
	Under; bad	Over; good	Average	Over; good	Under	Average	Average	Average	W. Watson, Hatfield Place gardens, Uxbridge
SURREY									
	Under	Average	Under	Over; good		Average; good	Over; good	Average	W. P. Balfour, Dorking
	Average; good	Under; good	Average; good	Over; good	Average	Over; very good	Average; good	Under	Max. Dean, Lifford Road, Kingston on Thames
	Under	Under	Over	Average	Average	Over	Average; good	Under	Thos. Deakin, Otfordslaw Park gardens, Chertsey
	Under; bad	Average	Over; very good	Average; good	Over; very good	Average; good	Over; very good	Average; good	W. F. Bond, Gifford Park Gardens, Farnham
	Average; good	Under; good	Under; good	Under; bad	Over; very good	Over; very good	Average; good	Under	W. E. Hunt Innes, The Grange Gardens, Hookbridge, Garsfield
	Under	Average; very good	Over; good	Over; good	Over; good	Over; good	Over; good	Over; good	George Kent, Norderly Park, Dorking
	Under; good	Under; good	Under; good	Over; very good	Under; good	Average; good	Over; very good	Average	C. W. Knowles, Emsesh Park Gardens, Farnham
	Over; very good	Average; good	Over; good	Over; good	Under; good	Over; very good	Over; very good	Average; good	G. J. Hunt, Ashford Park Gardens, Epsom
	Average; good	Average; good	Average; good	Average	Under	Over; good	Over; very good	Average	W. Walker, Shirley, Croydon
	Under	Under	Average	Average	Under	Over; good	Average	Average	W. C. Leach, Albany Park Gardens, Guildford
	Over	Over	Average	Over; good		Average; good	Over; good	Under; good	J. F. M. Ford, Spencer Cottage, Roe, Leatherhead
	Average; good	Average; very good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Under; good	W. Hennes, Col Lam Park gardens, Guildford
	Under; bad	Average; good	Under	Over; good	Average; good	Average; good	Over; good	Average	A. Wilson, Eridge Castle Gardens, Tunbridge Wells
	Under	Under	Under	Under	Under	Average; good	Average; good	Under	Max. Ford, jun., Possingworth Gardens, Cross in Hand
	Under; good	Under	Under; good	Average	Under	Average	Over; very good	Average	E. Bromby, Castle gardens, Amsted
	Under; bad	Average; good	Average; very good	Over; very good	Under	Over; good	Over; small	Average; good	W. W. Smith, West Dean Park Gardens, Chichester
	Under; bad	Average	Over	Over; good	Under	Over; good	Average	Average; good	W. Bannison, Brambley Gardens, East Grinstead
WILTSHIRE									
	Under	Under	Under	Over	Average	Average	Average	Under	H. C. Pinner, Boxed Park, Uckfield
	Under; bad	Average; good	Average; good	Over; good	Average	Average; good	Average; good	Under	Joseph Todd, Longfold Gardens, Wootton Bassett
	Under; good	Average; very good	Under	Over; very good	Under	Over; good	Over; good	Over	Thomas Chadler, Wilton House Gardens, near Salisbury
	Under; good	Under; good	Average; good	Average; good	Average; good	Average; very good	Over; very good	Over	George Brown, Rowood Gardens, Calce
	Under; good	Average; good	Over; very good	Over; good	Under; good	Over; very good	Over; very good	Average; good	E. F. Hazdon, Longfold Castle Gardens, Salisbury
	Under; good	Average; good	Average; very good	Over; very good	Average; very good	Over; very good	Over; very good	Average; good	Thos. Hall, Charlton Park Gardens, Marlborough
7. England, N.W.									
CUMBERLAND									
	Average; good	Over; good	Average; good	Under; good	Average; very good	Over; very good	Average; good	Under	Arthur C. Smith, Edenhall Gardens, Keswick, R.S.O.
LANCASHIRE									
	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	Average; good	Under	W. F. Roberts, The Gardens, Cierdon Hall, Preston
	Average; good	Over; good	Average; good	Over; very good	Average; good	Over; good	Average; good	Under	Wm. A. Iron, Wroughton Hall Gardens, Wigan
WESTMORELAND									
	Under	Under	Under; good	Average; good	Average; good	Over; very good	Under; good	Under	J. Clarke, Lowther Castle Gardens, Penrith
	Under; bad	Under; good	Under; bad	Under	Under	Under; good	Over; good	Under	W. A. Miller, Underley Gardens, Kirkby Lonsdale
8. England, S.W.									
CORNWALL									
	Under	Under	Average	Average		Over; very good	Over; very good	Under	W. H. Bennett, Menafely, Par

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY	APPLES	PEARS	PLUMS.	CHERRIES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS	NAME AND ADDRESS
8. England, S.W.									
CORNWALL	Under	Average	.....	Modiolus average	.....	Over	Over; very good	.....	A. Mitchell, Tehidy Park Gardens, Camborne.
	Under; good	Under; good	Under; bad	Average; good	.....	Average; good	Over; very good	Under; good	Alfred Beal, Port Elliot Gardens, St. Germans, R.S.O.
DEVONSHIRE									
	Under; good	Average; good	Under; good	Over; very good	Under; bad	Over; very good	Over; very good	Under	A.C. Bartlett, Deenarthow Gardens.
	Average; good	Over; good	Average; good	Over; of fair quality	Under; poor	Over; good	Over; good	Average; good	Andrew Hoop, Prospect Park, Exeter
	Under	Under	Under	Average; good	.....	Over; bad	Average; good	Under	Geo. Baker, Meabland Gardens, Plymouth.
	Average; good	Average; good	Average; very good	Over; very good	Average; good	Average; very good	Average; very good	Average	James Mayne, Biston Gardens, East Dindlogh.
	Average	Average; very good	Average	Over; good	Under	Over; very good	Average; good	.....	G. Foster, Glendarragh Gardens, Tettonmouth.
	Under; good	Over; very good	Under; good	Under; bad	Under; good	Over; very good	Over; very good	Over; very good	C.W. Blyde, Pinlay Gardens, Lyne Revis.
	Under	Average	Over; good	Under; good	Under	Over; good	Over; good	Under	T.H. Slade, Baltimore Gardens, Exeter.
GLOUCESTERSHIRE									
	Average; good	Average; good	Over; good	Average; good	Under; very good	Over; good	Over; very good	Average; good	Geo. W. Marsh, St. George's Nursery, Cheltenham.
	Under; good	Average; good	Under; bad	Over; good	Under; good	Over; good	Over; good	Average; good	Thos. Edington, Fortworth Court Gardens, Falfield.
	Under	Average	Under	Over	Average	Average; very good	Under	Average	W. Greenwood, Dodington Gardens, Chipping Sodbury.
	Average	Over	Average	Over	Average	Over	Average	Over	William Keen, Bowden Hall Gardens, near Gloucester.
	Under	Under	Over	Average	Average	Over	Under	Under	John Swales, Highnam Court Gardens, near Gloucester.
HEREFORDSHIRE									
	Under	Under	Average	Over; good	Average	Over; good	Over; good	Average	Alfred James, Woodstone Rectory Gardens, Cheltenham.
	Average; good	Under; good	Average; good	Over; good	Under; good	Over; good	Over; good	Under	Geo. Miles, Titley Court Gardens, Titley, R.S.O.
	Average; good	Average; good	Over; good	Average; good	Under; very good	Average; good	Over; good	Average	John Watkins, Pomona Farm, Witlington.
MONMOUTHSHIRE									
	Under	Average; good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Average	Thos. Spencer, Goodrich Court Gardens, Ross.
	Average; good	Average; good	Under	Over; good	Average; good	Over; good	Average; good	Over	W. F. Woods, Llanfrefcha Grange Gardens, Caerleon.
	Average; good	Average; good	Over	Over	Average	Over	Over	Over	Thos. Goodier, The Hendre gardens, Monmouth.
SOMERSETSHIRE									
	Average	Average	Average	Over	Average	Over	Over	Over	Henry Townsend, Maindill Court Gardens, Aberavenny.
	Under; good	Under; good	Average; good	Average; very good	Average; good	Over; good	Over; good	Average; good	Samuel Kildy, Snythead Court Gardens, Wrington.
	Average	Under	Under	Average	Under	Average; good	Average; good	Average; good	Thomas Wilkins, Inwood House Gardens, Henstridge.
	Under; good	Under; good	Under; good	Average; good	Average; very good	Over; good	Over; very good	Over; good	William Balllett, Cheyne Cottage, Gosington, Brinkwater.
WORCESTERSHIRE									
	Average; very good	Average; very good	Over; very good	Over; very good	Over; very good	Over; very good	Average; good	Over	John Crook, Forle Abbey Gardens, Chard.
	Average; very good	Average; good	Average; good	Under; very good	Average; good	Over; very good	Average; very good	Average; good	V. Young, Willey Court Gardens, Stourport.
	Average; good	Average; very good	Over; good	Over; very good	Over; very good	Average; good	Average; good	Average; good	F. Jordan, Impney Gardens, Droitwich.
WALES									
BRECONSHIRE									
	Under; bad	Average; good	Average	Over; good	.....	Average; very good	Average; very good	Under	C. Hubert, Craig-y-Nos Castle gardens.
CARDIGAN									
	Under; bad	Under; bad	Under; good	Over; good	.....	Over; good	Over; good	Under; bad	George Wright, Bronwydd Gardens, Maw-Hyn, Llanidloes.
CARMARTHENSHIRE									
	Under; bad	Average; good	Under; bad	Average; good	.....	Under	Average	Under	Levy Row, Edinford, Llandilo.
CARMAIGNONSHIRE									
	Average	Average	Under	Average	Under	Under	Over; good	Average; good	William Parker, Soddifawr Cilycwm Gardens, Llanidloes.
FLINTSHIRE									
	Average; good	Average	Over; good	Average; very good	.....	Over; good	Under; bad	Over; good	Alan Gables, Vaynol Park Gardens, Bangor.
GLAMORGANSHIRE									
	Average	Very good	Very good	Average; very good	.....	Over	Under	Over; good	T. Evans, Gwylyr Gardens, Llanrwst.
	Under	Average	Average	Under	Under	Average	Average	Average	John Forsyth, Hawarden Castle, Llanwrda.
	Over; good	Over; good	Average; very good	Average	Average;	.....	Average; very good	.....	L. Christie, Dunraven Castle gardens, Bridgend.
	Under; good	Under; good	Under; good	Over; good	Over; good	Over; good	Over; good	Over; good	A. Pethigrew, Castle Garden, Cardiff.
MERIONETHSHIRE									
	Average; good	Average; good	Over; good	Over	.....	Over; good	Over; good	Over; good	E. Milner, Margam Park Gardens, Port Talbot.
PEMBROKESHIRE									
	Under; good	Under; good	Average	Average	.....	Over; good	Over; good	Under	Jas. Bennett, Estate Office, Rhag, Gwynedd.
	Average; good	Over; good	Under	Over	.....	Over; good	Over; good	Average	W. B. Fisher, Stackpole Court, Pembroke.
	Average; good	Over; good	Under	Over	.....	Over; good	Over; good	Average	Geo. Griffin, Shebeck Park Gardens, Haverfordwest.
IRELAND—									
9. Ireland, N.									
GALWAY									
	Average; good	Average; good	Under; good	Over; good	.....	Over; very good	Under; bad	Under	Thomas Dunne, Lough Cutra Castle Gardens, Gort.
	Average; good	Average; very good	Under; good	Over; very good	.....	Over; very good	Average; good	Average	Andrew Porter, Woodlawn Gardens, Co. Galway.
LONDONDERRY									
	Under	Average	Under	Average	.....	Average	Average	Average	John Raftery, Castle Forbes, Newtown Forbes.
MAYO									
	Under; bad	Average; good	Under	Average; good	.....	Over; very good	Over; very good	Under	Patrick Connolly, Cranmore House Gardens, Ballinrobe.
MEATH									
	Under; good	Over; good	Average; good	Average; good	.....	Under	Average; very good	Under	James Moore, Summerhill House Gardens, Enfield.
SLEIGO									
	Over; good	Average; good	Under; bad	Average; good	.....	Over; very good	Over; very good	Under; bad	James Moore, Markree Gardens, Coltonoy.
	Under; very good	Over; good	Average; good	Average; good	Under; very good	Over; good	Over; good	Under; bad	James E. Dawson, Lissadell Gardens.
TYRONE									
	Average; very good	Average; very good	Over; good	Average; good	.....	Over; very good	Over; very good	.....	Fred W. Walker, Son House Gardens, Strabane.
WESTMEATH									
	Under; good	Average; good	Average; good	Average; good	.....	Average; very good	Average; good	Under	James Tivendale, Waterston Gardens and Estate, Athlone.
WICKLOW									
	Under	Average; good	Average	Average; good	Average	Over; very good	Over; very good	Under	William O'Heir, Powerscourt.
10. Ireland, S.									
CLARE									
	Under	Average	Under	Under	.....	Over; very good	Over; very good	Under	Wm. Clarke, Castle Crine Gardens, Six-mile-bridge.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
10, Ireland, S.									
CORK	Under: good	Over: very good	Under: good	Average: very good	Average: good	Over: very good	Over: very good	...	C. Price, Mitchelstown Castle Gardens, Mitchelstown.
KILDARE	Under	Average: very good	Average	Over: good	Under	Over: very good	Over	Under	F. Redwood, Stratton House Gardens, Stratton Station.
KILKENNY	Under: bad	Over: good	Average: good	Average: good	Average: good	Over: very good	Average: good	Under	Henry Carlton, Kilkenny Castle Gardens, T. J. Hart, Barr Castle Gardens.
KING'S COUNTY	Average: good	Average: good	Average on walls: good	Over: good	...	Average: very good	Over: good	Over: good	W. A. Bowles, Mare Manor, Limerick.
LIMERICK	Under: good	Under: good	Under: good	Average: good	Average: good	Over: very good	Average: good	Average	Terence Rogers, Frenelpark House Gardens, Frenelpark.
ROSCOMMON	Average: good	Average: good	Under	Average	...	Average: good	Average: good	Average	Thomas Dunne, Stranedyck Castle Gardens, Tallow.
WATERFORD	Average: good	Average: good	Under: bad	Over: very good	...	Average: good	Over: very good	...	
CHANNEL ISLANDS									
GUERNSEY	Average: good	Average: very good	Under: good	Under: good	Under	Over: very good	Over: very good	...	Charles Smith & Son, Caledonia Nursery, Guernsey.
JERSEY	Average: good	Average: very good	Under: good	Over: very good	Average: good	Over: very good	Average: good	...	Edwin John Ashford, 16, Dorset Street, St. Helier, Jersey.
	Under: good	Under: good	Under: good	Average: good	Under: bad	Over: good	Average: good	...	H. Becker, Gosareau Nursery, Jersey.
ISLE OF MAN	Average	Over	Under	Over: good	...	Over: very good	Over: very good	...	James Murphy, Cronkbourne Gardens, Douglas.
	Average	Over: good	Under	Average	...	Average	Under	...	James Drillis, The Nunery Gardens, Douglas.

SUMMARY.

Records.	Apples	Pears	Plums	Cherries	Apricots	Small fruits.	Straw-berries	Nuts.
SCOTLAND								
Number of Records	(55)	(56)	(54)	(52)	(50)	(52)	(54)	(52)
Average	29	21	24	28	7	25	16	6
Over	8	8	8	12	2	24	24	2
Under	21	25	36	12	19	1	4	1
ENGLAND AND WALES								
Number of Records	(190)	(188)	(187)	(186)	(118)	(190)	(190)	(113)
Average	54	58	72	93	68	73	83	80
Over	6	25	26	77	31	112	98	48
Under	139	65	92	16	45	5	9	15
IRELAND AND CHANNEL ISLANDS								
Number of Records	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Average	10	15	7	14	7	6	19	4
Over	1	6	1	7	4	16	11	1
Under	12	2	15	2	4	1	2	10

NORTHAW HOUSE, POTTERS BAR.

AN interesting old residence surrounded by a fine old garden from which, across the pleasure grounds and race-house paddocks, comprising about 200 acres, fine views of the surrounding country appear through openings in the girdle of aged Oaks and Elms which encircle the estate. At one time a noted garden, it had been allowed to decline until some three years ago, when the property came into the hands of J. B. Joel, Esq. It was sadly in need of the capital which he has so liberally expended on it with such good results under the management of his gardener, Mr. J. May, who had previously been gardener at Northaw for over twenty years. Uncompromising renovation, without destroying any of the beauty which age imparts to an estate, has been the order of the day, consequently much of the old fashion of the garden has been retained; but in the matter of flowers it has been brought up-to-date with the most happy results. The garden surrounding the house, with its adjoining ornamental rockery and Palm-house, merges into the pleasure grounds, some few beds of Fuchsias, Cannas, Pelargoniums, and other showy flowers appearing near the house, on one side of which stands a gigantic *Araucaria imbricata*, which must have occupied the position for many years. The walks and shrubberies are bordered with hardy perennials, Pinks, Carnations, and other

fragrant flowers, now making a good display. In beds and borders, Zinnias, Stocks, and Asters are used with fine effect, and the manner of arranging the walled-in kitchen-garden with broad borders of dwarf Roses, Carnations, and with the showy herbaceous perennials, renders walking in that part of the garden as pleasant as in the flower-garden, as well as securing large numbers of flowers for cutting without interfering with those required for more permanent effect. One of the best features in the kitchen-garden and in other parts of the garden, is made by the pillars of *Noisette* and other trailing *Roses* which stand at the corners of the beds and in other prominent places, and which are now 8 to 10 ft. in height, and literally covered with flowers and flower buds.

THE ORCHIDS.

Some time ago it was decided to commence Orchid-culture on a moderate scale, and with that thoroughness which characterises all his transactions, Mr. Joel caused a proper Orchid-house to be arranged. This is a fine, large, span-roofed structure, fitted with a centre stage for moisture-holding ballast, and with an open staging raised above it on which to stand the plants. Similar staging runs round the house, and the greater part of its occupants are *Cattleyas* and *Laelias*, which have thriven in the most satisfactory manner under the care of Mr. May's son, who evidently takes great interest in his charge, and has thoroughly

grasped the subject of *Cattleya* and *Laelia* culture.

The middle row in the centre stage consisted of fine plants of *Laelia purpurata*, which were just over, and the very fine display now seen is chiefly composed of a large number of *Cattleya Warscewiczii* (gigas), most vigorously grown and profusely flowered, the flowers good and very large, but exhibiting singular variation in their tints, each of the different importations having some peculiarity by which its members can be recognised. The bulk of them are of the large-flowered form, with fine bright crimson-purple labellums, the disc of yellow on each side of the tube in these forms being very small, and in the form known as *saturata*, these yellow spots almost disappear. The rather lighter coloured type has the yellow patches on each side of the lip, large and clearly defined; and the lightest section has flowers of an almost uniform rose-tint, with darker marbling on the lip, the disc of which is white, with yellow patches in the centre of the lighter area. One of these forms has a singular-looking patch of white, striped with purple in front of the usual light blotches on the lip, and all forms offer features interesting to examine and compare. With them were a number of very good *Cattleya Mendeli*, *C. Mossie*, *C. Gaskelliana*, and some *Cypripediums* and other showy *Orchids*, all giving distinct proofs of the satisfactory results of selection and careful culture. The plants of *Cattleya aurea*, and some of the smaller growing kinds, are grown in baskets, &c., suspended from the roof.

The *Dendrobiums* are grown in a house partly occupied by *Cocos Weddelliana* and other decorative plants, the back wall being covered with *Passiflora racemosa* in flower.

THE FRUIT-HOUSES.

have good crops in the vineery, Melon, and other fruit-houses. In each is a good show of flowers on the numerous well-grown plants of *Gloxinias*, *Begonias*, &c.; and these houses, when not at work, are utilised for resting *Dendrobiums*, &c. In one greenhouse, the back wall of which is covered with *Pelargoniums* and *Plumbago capensis* in bloom, is a good show of tuberosus *Begonias* and other greenhouse flowers, and every part of the garden, both indoors and out, is kept by Mr. May in the neatest condition. Mr. and Mrs. Joel and their children are very fond of flowers, and good supplies have to be forthcoming at all seasons.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER**.
Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

APPOINTMENTS FOR THE MONTH OF AUGUST.

SATURDAY,	Aug. 10	Coniston Horticultural Show.
TUESDAY,	Aug. 13	Royal Horticultural Society's Committees meet.
THURSDAY,	Aug. 15	Swansea Horticultural Society's Show. Tamorton Deane Horticultural Society's Show.
WEDNESDAY,	Aug. 21	Shropshire Horticultural Society's Exhibition at Shrewsbury (two days).
THURSDAY,	Aug. 22	Royal Horticultural Society of Perthshire's show (three days).
SATURDAY,	Aug. 24	Strathleven Horticultural Society's Show.
TUESDAY,	Aug. 27	Royal Horticultural Society's Committees meet.
WEDNESDAY,	Aug. 28	Glasgow Exhibition and Glasgow and West of Scotland Fruit Society's Show of Pot Plants and Flowers (two days). Hampden Horticultural Society's Show. Bath Floral Fete (two days).
THURSDAY,	Aug. 29	Sandy (Reds) Floral and Horticultural Exhibition.
FRIDAY,	Aug. 30	Abersford Horticultural Society's show (two days).

SALE FOR THE ENSUING WEEK.

FRIDAY NEXT. Imported and Established Orchids in large variety. Orchids in Flower and Bud, at Protheroe & Moffet's Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—63.

ACTUAL TEMPERATURES:—

LONDON, July 31 (6 P.M.). Max. 59. Min. 50.
 LONDON, July 31 (10 P.M.). Max. 59. Min. 50.
 PROVINCES.—July 31 (6 P.M.). MAX. 75. (Home Counties; Min. 56. (Oxfordshire).

ONCE again we are indebted to our correspondents in all parts of Britain and Ireland for reports which give an accurate idea of the condition and prospects of the hardy fruit crop, and a very remarkable report it is. It would naturally be supposed that the excess or the defect would be co-related with the geographical position, local peculiarities, and meteorological conditions of the different districts. Of course, to a certain extent, this is so; but, as a glance at our tables will show, it is so to a very limited extent. Take Apples, which may generally be considered to be much below average; in Scotland the proportion is much more favourable than in England. Out of fifty-five records from the northern kingdom twenty-six, nearly half, are returned as average; whilst in England, out of one hundred and ninety records, only fifty-four are chronicled as average, as compared with eighty-eight in 1900, and ninety-seven in the year preceding.

In one fruit garden near Berkhamstead, Herts, not a bushel can be had from seven acres of standard and bush Apples. Over all these seven acres Apples may therefore be said to be practically non-existent.

Of Pears in England and Wales, we have one hundred and eighty-eight records, ninety-eight that declare an average crop, as against one hundred and four in 1900, and fifty-seven in 1899.

Out of a total record of one hundred and eighty-seven relating to Plums in England and Wales, seventy-two are reported as average, which is about the same as in 1900, and greatly in excess of 1899.

Cherries this year show ninety-three average reports out of a total number of one hundred and eighty-six in England and Wales; no fewer than seventy-seven over average, and only sixteen below it; so that this has been a good Cherry year.

Apricots have also done well, and small fruits and Strawberries very well.

Of other fruits which are not of primary commercial importance, it is not necessary to speak here. In subsequent issues we shall give a selection from the notes of our correspondents, to whom we tender, in the name of our readers, our most hearty thanks.

Finally, we can but express our regret that some statistician does not study our reports, which have now been given for many consecutive years, and elicit from them when confronted with meteorological and other data some general conclusions which could hardly fail to be of value to cultivators. The task is much too onerous for those who have to conduct a weekly journal, but it is surely not beyond the capabilities of those who have the requisite leisure and ability.

The Sweet Pea

Two hundred years or thereabouts have elapsed since the Sweet Pea was introduced into British gardens. It has been a favourite flower ever since, and the efforts that were made last year to celebrate the bi-centenary of its introduction have no doubt tended to extend its popularity. The reports of that gathering, and of the exhibitions in connection with it, have just been published in time for the present Sweet Pea season, and the first show of the National Sweet Pea Society, was reported in our last issue. Of course, the information put forth is now somewhat out of date. Still, there are many who will be glad to possess in a handy form the record of the latest development in the way of florists' flowers and special societies ("All about Sweet Peas," R. DEAN, Eding. The history of the Sweet Pea was given in our columns, July 14, 1900, p. 30, and it is treated of by Mr. DICKS in the booklet before us. Other papers relate to the classification of the varieties by Mr. W. P. WRIGHT. The varieties are now so numerous that some sort of classification has become essential, and that propounded by Mr. WRIGHT, and modified by members of the committee, is well adapted for the purpose. The labours of the raisers, especially of the veteran HENRY ECKFORD, are appropriately commemorated, and it is pleasant to read the warm tribute paid to our countryman by an enthusiastic amateur, Rev. W. T. HUGHES, from across the Atlantic.

Whilst we all applaud the efforts to "improve" the Sweet Pea in certain directions, such as general vigour, variety of colour, fragrance, substance of petal, number of flowers on the stalk, and the like, it is open to grave doubt whether the attempts to regularise the flower according to the florists' standard are in good taste. The flower of the Sweet Pea is naturally highly irregular in form; that irregularity is intimately connected with the life-history and work of the flower, and its relation to insect-visitors.

Every wave and curve of the petals, whilst it contributes essentially to the beauty of the flower, has a purpose of its own, or is the result of adaptation to circumstances or hereditary endowment. If we want to improve such a flower we should follow Nature's own indications, accentuate its peculiarities, and bring out its purposeful modifications. By flattening out the petals, smoothing their inequalities of surface, causing them to assume a more or less circular outline which is not natural to them, the flowers speedily become monotonous, and lose their delightful play of colour. Significance and interest are also squeezed out of them, and in place of the variety of form, of tint, of curve, of light and shade, we get a regular form, about as interesting and instructive as a circular piece of coloured paste-board. It is a triumph of evolutionary art, no doubt, but we should like to see evolution carried out on the lines dictated by the flower itself, rather than on those more or less artificially imposed upon it by the arbitrary fancy of the florist. The "standard" set up for one flower should not be insisted on in the case of a flower of different conformation, but each should be treated on its own merits.

All the forms that have hitherto been produced in the Sweet Pea are variations from one species, consequently the range of variation is relatively small. The "Cupid" section is the greatest deviation from the type hitherto met with, but reversions from the dwarf to the climbing form are not uncommon. Crosses between the Sweet and culinary Peas have been effected, but they have not as yet established themselves in the regard of cultivators.

Our illustration (fig. 300) shows several typical forms, mostly raised by Mr. ECKFORD, and selected by him at our request, as illustrations of his unrivalled skill and judgment, and as examples of what the Sweet Pea is like in the early years of the twentieth century.

The varieties figured on p. 87 are all named, but we may here add the colours of the several forms beginning at the upper left hand corner:—

1. MISS WILMOT—rose.
2. MRS. JOS. CHAMBERLAIN—finely streaked, full rose on a white ground.
3. BLACK KNIGHT—deep maroon.
4. SABLE BERBERE—clear white.
5. COULSEA—crimson.
6. DUCHESS OF WESTMINSTER—pale salmon.
7. MRS. E. KESBYN—pale yellow.
8. LADY GRISSEL HAMILTON—pale lavender.

GROUP OF ODONTOGLOSSUMS.—Our Supplementary Sheet represents a group of *Odontoglossum crispum*, including the handsome O. E. Mrs. R. Brooman-White, taken by their owner, R. BROOMAN-WHITE, Esq., Arddarroch, Garelloch, Dumbartonshire, a place noted for fine culture of *Odontoglossums*, and for the number of superb spotted forms which have flowered in the collection; and most of which have been shown at the Royal Horticultural Society's meetings, and received well-merited awards. Cattleyas at one time used to be the prime favourites at Arddarroch, but experience taught that the fine air of the Western Highlands was especially suitable to *Odontoglossums*, and consequently large quantities of them were acquired, and the wisdom of the selection is verified by the plants growing in the most vigorous manner, and producing a profusion of flower of fine quality and substance; the houses occupied by them being a grand sight in the flowering season.

ROYAL NURSERYMEN.—Messes, WILLIAM CUTBUSH & SON, of Highgate and Barnet, have been appointed by Royal Warrant nurserymen to His Majesty the KING.

GRAFTING THE GRAPE-VINE IN ORDER TO SECURE EARLINESS.—In the *Revue Horticole*, M. SABRON, a Vine-grower of Thomery, relates how he made a number of grafting trials with the well-known Chasselas Doré Grape, on a variety of stocks, with regard to cropping and ripening. These results were substantiated by the Fruit Committee of the French National Horticultural Society in Paris. It appears that on stocks of *Vitis riparia*, the ripening period began fourteen days earlier than on its own roots; on Frankenthal (Black Hamburg) the ripening period was normal, but the berries were larger; on *V. rupestris* du Lot, and on Arémont (Barekhardt's Prince), the ripening period began later. When worked on its own roots the period is quite normal, and the Grapes are remarkable for their fine colour and good keeping properties.

“THE ART AND CRAFT OF GARDEN MAKING.”

—The second edition of Mr. MAWSON'S elegant work on the laying-out of gardens has been issued by Mr. H. T. BATESFORD, 91, High Holborn. The book is as attractively got up as was the first edition, and the preface will be read with amusement as embodying the very diverse criticisms passed upon the first edition. The author, in face of this diversity, expresses his intention of going back to first principles. We feel inclined to take the same journey with the author, and to ask him what he means by a garden? This defined, the way will be cleared for the consideration of the art and craft of making it. At present it seems as if the garden, in Mr. MAWSON'S opinion, is to be treated principally as an appanage of the mansion. If so, it is the art and craft of the bricklayer and mason, not of the gardener, that we have to consider.

STRUCTURE OF THE SUCKERS OF WOODY PLANTS.—M. MARCEL DUBARD, in a recent issue of the *Comptes Rendus*, gives an account of the structure of the suckers of woody plants, from which we take the following extracts:—

“Most trees and shrubs have the capability of sending out suckers, which are formed, according to the species, either when the trees are in full vigour, or when its vitality is diminished, or even only after cutting down the trunk to the level of the soil. The suckers rise either from the roots (*Populus*, *Fagus*, *Corylus*, *Lyrcium*, &c.), or from dormant buds of the stock (quercus), or from the cambial zone when it has been cut (quercus), *Populus nigra*. The stems that constitute suckers, whatever their origin, being placed under peculiar conditions of nutrition, differing notably from those of normal branches, they, for instance, their more direct relation with the roots ensure them a larger supply of water. There is, usually, rapid growth results, and a more simple structure, for it is known that turgescence increases the rapidity of development, but regards, on the contrary, the differentiation of the tissues. Briefly concludes M. DE MARCEL, suckers have a tendency to assume the characteristics of herbaceous plants: shoots being marked by rapid growth, elongated internodes, developed and persistent stipules, dissociated buds, less differentiation of the tissues, especially the tissues destined for protection and support; less abundant production of fiber in comparison with the wood, poor ripening, assimilative tissue, but little developed, exception of oxalate of calcium much less, and, in the same genus, it appears that the suckers of the several species show a greater resemblance with attenuation of specific characters.”

THE JARDIN DES PLANTES AND THE FRENCH COLONIES.—In the latter years of his life the late Professor MAXIME CORNE devoted much attention to developing the resources of the French colonies, by growing in the *Jardin des Plantes* various plants of economic importance, and transmitting them to the French possessions. A pamphlet before us entitled *Le Jardin des Plantes de Paris et les Colonies*

Françaises, gives in some detail the result of the activity of the late Professor in this direction, especially in the case of the French colonies on the West Coast of Africa.

ENDLICKE HALL, SHEFFIELD, was the residence of the late Sir JOHN BROWN, and during his life its gardens were the finest and best maintained in the district. How extensive they were, and what a number of interesting plants was then cultivated, may be seen on reference to an illustrated article that was published in our pages, August 11, 1875, p. 207. Since Sir JOHN'S death, the place has been purchased by a syndicate, who have converted the residence into a sort of hall, &c., which is let for balls, receptions, dinners, and other functions. The glass-houses, of which there are upwards of a dozen, are rented by Mr. WILLIAM HARTROW, who was Curator of the Sheffield Botanical Gardens until the company was wound up; and previous to going to Sheffield was with Mr. LYCETT at the Cambridge Botanical Gardens, to which position he was sent from Kew. Mr. HARTROW commenced business as nurseryman and florist when he left the botanical gardens; and the glass-houses at Endlicke Hall afford him facilities for housing a large number of Palms and other decorative foliage plants, as well as flowering species. There are some fruit-houses, including vineries also in full bearing, and Mr. HARTROW informed us when visiting him on a recent occasion, that there is not the least difficulty in finding a sale for such produce. In addition to the sale of plants and fruits, some gardens have been laid out, and some of our readers will be glad to know that Mr. HARTROW seems likely to establish a satisfactory business.

A “STUNNING BRIDE.” One of our American exchanges has an article on the preparation of wedding bouquets. The florist, it is pointed out, “cannot be too careful or too artistic in preparing a bouquet to be carried by a stunning bride.” Is she to make use of the bouquet to stun the unfortunate bridegroom, or whom? The bride is “to carry the bouquet in both hands, and allow the arms to assume a graceful position before the body.” Intending brides please note.

“FLORE DE LA FRANCE.”—We note the appearance of Fasciolo 3, partie 2, of the first volume of the “*Flore descriptive et illustrée de la France, de la Corse et des Contrees limitrophes*,” par l'Abbé H. COSTE. The instalment before us leads from *Cytisus* to *Ombrychis* (the arrangement being according to the sequence of the Natural Orders), and includes figures 782 to 1082, and a “Table des Familles et des Genres du premier volume.” The figures are small, but characteristic outlines like those in the illustrated edition of BENTHAM'S *Handbook*.

“FIELDS, FACTORIES, AND WORKSHOPS; or Industry combined with Agriculture, and Brain Work with Manual Work.” By Prince KROPOTKIN. New edition (third thousand), illustrated and unaltered. (London: SWAN, SONNENSCHEIN & Co., Paternoster Square, E.C.) It will be remembered that this is by no means a new book, but is a fresh edition of what is, in its way, a classic. Into political economy, as here spoken of, this is not the place to enter; but it may be said that Prince KROPOTKIN is an advocate for the decentralisation of industries; in homely example, he prefers the establishment and encouragement of cottage and village industries, rather than the massing of energies into colossal establishments. The principle, applied among other things to agri-

culture, would involve the farming by small pieces of much now unprofitable land; in fact, a development of the “three acres and a cow” scheme, having for one object, a check upon town immigration, and the consequent depopulation of the country. A further issue of this plan is to lessen imports by raising, in small holdings and local undertakings, much of the produce of every description which we now obtain from the colonies and from abroad. It is held that much of our native wealth is wasting for need of proper development, and that the country could be made self-supporting in respect of many articles for which money is now paid out. For this unthriftiness, the onus rests with those careless of their responsibilities, and indifferent as to the origin of food and other stores. The small market-gardens and manufacturing industries in many continental towns are a reproach to the carelessness of British landowners.

SELBORNE PLANTS.—It may be of interest to many of our readers to see a list of the more conspicuous plants growing in the neighbourhood of Selborne, the direct descendants of those that WHITE must often have seen. Over-sensitive people need have no fear of a “rail” having been made, for the specimens are all sent as “cut flowers,” whose removal would not injure the plants; moreover, they were gathered by Mr. STANTON, who is too keen a lover of Nature to inflict wanton injury. It will be seen that the flowers are all of them from ordinary South of England plants, that many of them indicate a chalky soil, and some, like *Vaccinium oxycoccos*, denote a healthy soil. The names are not arranged in any order:

- | | |
|----------------------------------|--------------------------------|
| <i>Agrostis ovina</i> Gill. var. | <i>Vaccinium oxycoccos</i> and |
| <i>Silene alba</i> | <i>V. myrtillus</i> |
| <i>Leclitium dioica</i> | <i>Conium maculatum</i> |
| <i>L. floricolum</i> | <i>Euphrasia grandiflora</i> |
| <i>Stellaria granamea</i> | <i>Oxalis pyramidalis</i> |
| <i>S. Hololeuca</i> | <i>Habenaria lutea</i> |
| <i>Potentilla sanguisuga</i> | <i>Gymnadeniella conopsea</i> |
| <i>Linum catharticum</i> | <i>Listera ovata</i> |
| <i>Dielytra caerulea</i> | <i>Oxalis maculata</i> |
| <i>Saxifraga hypnoides</i> | <i>Manitula biflora</i> |
| <i>Plantago epithymum</i> | <i>Rhinanthus crista galli</i> |
| <i>Plantago rotundifolia</i> | <i>Digitalis purpurea</i> |
| <i>Veronica hederaefolia</i> | <i>Polygonum silvestris</i> |
| <i>V. scutellata</i> | <i>Veronica officinalis</i> |
| <i>Nepeta oleracea</i> | <i>V. Anagallis</i> |
| <i>Primula vulgaris</i> | <i>V. Chamædrys</i> |
| <i>Agrostis repens</i> | <i>V. hecabanaga</i> |
| <i>Galadialium litoreum</i> | <i>Potentilla Tormentilla</i> |
| <i>Linum album</i> | <i>P. reptans</i> |
| <i>L. purpureum</i> | <i>Leguminosae Podagraceae</i> |
| <i>Stachys silvatica</i> | <i>Scrophularia nodosa</i> |
| <i>Lithospermum officinale</i> | <i>Oenanthe crocata</i> |
| <i>Symphitum officinale</i> | <i>Euphorium polystachyum</i> |
| <i>Mosses paleo-trochilium</i> | <i>Nasturtium palustre</i> |
| <i>Geranium robertianum</i> | <i>V. hirsuta Opuntia</i> |
| <i>G. pyrenæum</i> | <i>V. lanata</i> |
| <i>Polygonum officinale</i> | <i>Eragrostis cypripetia</i> |
| <i>Hypericum hirsutum</i> | <i>Bacopa Laureola</i> |
| <i>Anagallis arvensis</i> | <i>Sambucus nigra</i> |
| <i>Polygala vulgaris</i> | <i>Centauria scabula</i> |
| <i>Thymus serpyllifolius</i> | <i>C. nigra</i> |
| <i>Asperula cynanchica</i> | <i>Chrysanthemum Luteum</i> |
| <i>A. odorata</i> | <i>ibidem</i> |
| <i>Galium saxatile</i> | <i>Lapsana communis</i> |
| <i>C. vertum</i> | <i>Achillea Millefolium</i> |
| <i>Helianthemum vulgare</i> | <i>Hieracium Pilosella</i> |
| <i>Campanula glomerata</i> | <i>Taraxacum officinale</i> |
| <i>Populus Rhorea</i> | <i>Bryonia dioica</i> |
| <i>Sedum arvense</i> | <i>Euphorbia amygdaloides</i> |
| <i>Lonicera Perelycium</i> | <i>Ranunculus scaberrimus</i> |
| <i>Chelidonium majus</i> | <i>Erigeron Tetralix</i> |
| <i>Torilis pratensis</i> | <i>E. cicutaria</i> |
| <i>Anthriscus vulgaris</i> | <i>Lesquerella nemorum</i> |
| <i>Ombrychis sativa</i> | <i>Polygonum Bisorta</i> |
| <i>Lathyrus pratensis</i> | <i>Euphorbia helioscopia</i> |
| <i>Agrostis sepium</i> | <i>Solanum Dulcamara</i> |
| <i>Lathyrus macrorhizus</i> | <i>Barbarea vulgaris</i> |
| <i>Lotus major</i> | <i>Tris pseudo-acornus</i> |
| <i>Genista tinctoria</i> | <i>Convolvulus arvensis</i> |
| <i>Vicia sativa</i> | <i>Rosa canina</i> |
| <i>Lotus corniculatus</i> | <i>R. arvensis</i> |

FARM AND ORCHARD PRODUCE BY RAIL.—Once more we are indebted to the obliging traffic manager of the Great Eastern Railway

Company for statistics relating to the cheap transit of small pads of farm and orchard produce from the place of production to the house of the urban purchaser. Under date July 29 the official writes:—"The statement of the number of farm produce-boxes has now been got out, and I find the number conveyed during the past half year was 78,500; whilst for the same period in 1900, we conveyed 77,800." It will thus be seen that there has been a gain of 700 boxes.

KOLRUTERIA PANICULATA.—This fine old tree, which I believe is very little known, is now in full flower, covered with its yellow panicles, about 9 to 15 inches long. The tree measures about 35 feet in height, and about 40 feet spread of branches. W. Howard. [In the private garden at Hampton Court Palace, an almost equally fine tree is now in full bloom. Ed.]

BOARD OF AGRICULTURE.—The recent publications of the Board include leaflets on the Tent Caterpillars (the Lackey Moth and the Brown-tailed Moth), and on the aphids which infest Currant-bushes.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Secretary, Mr. G. J. INGRAM, desires us to inform our readers that the gardens and grounds at Battle Abbey, Sussex, will be re-opened to the public on Tuesdays, commencing from July 30; and by kind permission of F. G. FANWELL, Esq., and Captain FORSTER, the proceeds derived from admission on Tuesday, August 13, will be given to the above charity.

PINEAPPLES P. AGAVE SISAL.—The cultivation of the fibre-yielding Agave has become of sufficient importance in the Bahamas to be considered as worthy of a special little monograph by the Governor. True, the Pineapple is still the main horticultural product of the Bahamas group of islands—some 1,000,000 of the value of £28,000 being exported to this and other countries; but a good market is also found for Sisal fibre, which has gained a high place for itself, and is being exported in gradually and steadily increasing quantities. About 11,406 acres are now under the crop throughout the group of islands, and the output in 1900 exceeded 1½ million pounds, valued at nearly £17,000. This double string to the commercial bow is a fortunate condition of things in our West Indian possessions.

AN AUSTRALIAN SEED CATALOGUE.—A remarkable catalogue has just come to hand from Messrs. ANDERSON & Co., seed merchants, &c., 399, George Street, Sydney, of large octavo size; it is profusely illustrated with woodcuts, and contains an excellent coloured drawing of forms of *Salpiglossis grandiflora*. Catalogue-making appears to be as well understood at the Antipodes as at home. This, from Sydney, comprises some 100 pages of closely-printed matter, and contains not only elaborate descriptions of many popular subjects, but also cultural details of wide interest. One is able to gain from it a good idea of plants popular on the other side of the world. In the matter of novelties in seeds and plants it is quite up-to-date, and there are charming photographs of *Cupressus macrocarpa variegata* and *Cassia Caudolemma*, which is described as one of the best of the handy flowering shrubs, covered with lovely yellow blossoms during April and May, as the photograph of an example growing in the open shows.

OUR TRADE IN PLANTS, BULBS, &c.—The Board of Trade has recently published, in two volumes, its great Annual relating to the trade

and commerce of the country for the year 1900. Such works are not compiled and published in a hurry; and the many hundreds of pages of seemingly bewildering figures are a monument to patience, perseverance, and enterprise of a colossal character. As in past years, so to-day we give those obtainable statistics of especial interest to the reader of this journal, which we are happy to be able to supplement with figures relating to the export of nursery stock, &c. The following relates to the—

IMPORTS OF PLANTS, SHRUBS, TREES, AND FLOWER-ROOTS, ENTERED FOR VALUE ONLY.

Imports from:	1897.	1898.	1899.	1900.
Germany	42,020	43,889	47,735	36,376
Holland	213,663	221,763	213,265	246,298
Belgium	41,780	49,872	54,641	53,903
France	41,561	49,768	54,969	52,290
Japan	18,554	18,119	21,259	20,250
United States of America	18,373	15,285	15,565	15,264
Mexico	2,294	319	1,142	560
Republic of Columbia	9,008	10,428	7,541	1,589
Brazil	3,715	6,259	6,484	2,957
Other foreign countries	4,947	4,110	3,974	3,493
Total foreign countries	398,875	411,217	423,195	427,504
Channel Islands	16,556	16,343	11,631	11,583
Cape of Good Hope	317	394	259	...
Natal	1,382	514	761	496
British East Indies	4,788	4,865	3,022	3,222
Hong Kong	2,983	171	299	178
Australasia	871	790	684	88
Canada	1,212	1,151	961	1,642
British West India Islands	944	543	488	510
Other British Possessions	562	794	519	610
Total British Possessions	23,643	19,598	21,571	18,259
Grand total	422,488	430,815	444,766	445,763

It is not very easy to account for the fluctuations in the above table. For the blank record for the Cape of Good Hope one word gives the reason—war. For the first time we are now enabled to supply the figures as to exports, which are as follows:—

Exports to:	1897.	1898.	1899.	1900.
Germany	362	856	1,184	957
Holland	1,457	2,397	2,217	1,723
Belgium	2,319	1,734	2,180	1,855
U.S.A. (Atlantic seaboard)	5,712	2,526	2,067	7,189
Other foreign countries	1,781	1,393	2,284	2,812
Total to foreign countries	11,811	8,836	10,472	13,827
British Possessions in South Africa	1,181	431	624	138
Australasia	587	313	425	462
Canada	182	813	1,465	1,392
Other British Possessions	599	158	691	875
Total to British Possessions	2,549	1,965	3,175	2,767
Grand total	14,360	10,801	13,647	16,594

The totals of imports and exports are as under:—1897, £436,818; 1898, £417,120; 1899, £458,211; 1900, £462,357.

PUBLICATIONS RECEIVED.—Board of Agriculture (Intelligence Division). Annual Report of Proceedings under the Sale of Food and Drug Acts, 1875 to 1899; Merchandise Marks Acts, 1887 to 1891; Fertilisers and Feeding Stuffs Act, 1893; and Board of Agriculture Act, 1899 (Section 2, Sub-section 3). For the year 1900.—Annual Report of the Gardens-

town Botanic Gardens for 1900.—Bulletin of the Botanical Department, Jamaica, June 1901. The contents include notes on: Pupil-apprentices at Hope Gardens; Nuts; a Dwarf West Indian Palm; Diseases in Pineapple Plants; Bergamot Orange; Vanilla in Seychelles; and Potato Diseases and their Treatment.—Agricultural Gazette of New South Wales, June. The contents deal with: Plants reported to be poisonous to Stock in Australia; and Useful Australian Plants, No. 70; Scrubby Gum of the Blue Mountains, by J. H. Maiden; Soil Temperature at Hawkesbury Agricultural College, and Heat Requirements of Plants, C. T. Musson; Observations on Guinea Grass, H. M. Williams; Removing Spines from the Prickly Pear; and Plantation of Timber Trees as a Commercial Speculation, by J. S. Cheesbrough.

MR. HARRY J. VEITCH AT HOME.

It was to me a singularly pleasant experience a few days since, having been engaged for several hours in traversing the rural lanes of North Bucks, judging gardens and allotments, to look in at East Burnham Park, the beautiful and delightful country residence of this famous horticulturist, and partake from Mrs. Veitch's hands in her pleasant summer-house on the lawn of her hospitality. Had I and my friends but known that just at the moment we were enjoying our meal under such delightful conditions that the metropolis was being in danger of drowning under the tremendous rainstorm then prevailing, it is probable that our enjoyment and gratification would have been greater rather than less! Still, rain was badly needed at East Burnham Park, as Mr. Veitch showed, when later we took a walk over his pretty place, and as indeed trees, shrubs, and grass generally demonstrated. Probably that refreshment so grateful to us has been vouchsafed to the parched soil ere now. Ever generous Mr. Veitch never seems more so to his numerous friends than when spend in hand, and having in him something of the British farmer, he conducts us through his gardens, his farm buildings, dairy, stables, poultry yard, pheasantries, and other things, which here, as elsewhere, do so much to make rural life happy and enjoyable. The house is large and roomy, yet not big. It is essentially an English home. The old portion, once the home of the historian Grote, has associated with it many traditions, and has sheltered many of the great ones of past generations. The old and the new portions are as becomes the home of such a gardener as is Mr. Veitch, prettily draped with climbers, and all its surroundings are charming, whilst choice shrubs and trees have been extensively planted. So, too, have Roses, Carnations, and other favourite flowers.

There is a fine collection of fruit trees and bushes, as also of Strawberries, but in such a wooded district, where birds have not yet been taught the ethics of "mine and thine," it is found needful to severely wire and net over soft fruits to keep them secure. Even the nut bushes have to be wired also to save the fruits from the depredations of those pretty rodents the squirrels, beautiful, but ungrateful little creatures—for here animal and bird life is almost religiously preserved, for the owner is not the man "who carries the gun," or who thinks, like Pope's egotist, that all is created that he might destroy. Nature, in her bounty here, gave a site that has proved to be charmingly suitable for the making of a wild garden, yet it is not so much an attempt to create many floral beauties artificially, as so many try to do, and so egregiously fail, but it is rather found in assisting Nature to furnish florally or in other ways charms which she

cannot always supply. This woody dell, a semi-bog, has had much of its wild undergrowth removed, some large beds or clumps fashioned, rough paths formed, suitable trees, shrubs, Bamboos, and semi-aquatic things planted, and without material effort or to secure essentially garden effects, some that are very delightful have been secured. In a somewhat secluded quiet pond there are floating on the surface, and in fine bloom, many of the newer Nymphaeas, whilst round and about the margin the surroundings are quite devoid of formality. Very little out of the many things here growing was specially noted, but very fine indeed was *Spiraea gigantea*, 6 feet in height, and very noble too. A most pleasing combination was seen in large plants of *Inula glandulosa*, from amongst which peeped up spikes of the pretty *Lythrum Salicaria*, which here seemed to be so much at home. The green and silvery *Eulalia* here growing quite tall, were most effective; and very pleasant was it to see a big mass of the old *Fuchsia gracilis* and *F. Riccartonii* in rich profusion, beautiful in bloom and so luxuriant. A striking object also was the Double Pink Bumble, which seemed to be so much at home, and was almost a mass of flower. However, in so brief a visit it is not possible to be noting details. Those who want more information should go and see. They will find the park is not far from the quaint old village of East Barnham on the one side, or from the famous Barnham Breeches on the other. It is oddly enough entirely encompassed by a high road, so that it lies practically in a ring fence. That is, without doubt, an advantage. Its aspect is chiefly south, and is fairly well sheltered.

Long may Mr. and Mrs. Veitch live to enjoy the fruits of a very active busy life, and in due time to bear into retirement, full of years and honours, the untarnished reputation of a great horticultural house. A. D.

NURSERY NOTES.

MIR. DRAPS-DOFF'S EXOTIC NURSERY AT LAEKEN, BRUSSELS.

THERE are in this nursery at the present time a good many plants in full perfection, which make the place very interesting to a visitor fond of plants. From the avenue is noticeable a dark green mass of young and bushy *Rhododendrons*, with, on one side of the entrance a border of different varieties of *Euonymus*, with pyramidal and standard *Laurus nobilis*; other borders being planted with New Holland and Cape plants, *Boronia*, *Acacia*, *Epaneris*, and *Erica*. Some of the last named are specially trained into various fanciful forms, such as spiral, candelabra, palmate, and cordon-like shapes. The rest of the outside is occupied by *Hortensias*, with their pink and blue inflorescences.

In the houses a large quantity of *Orchids* are grown, *Cattleya Mossiae*, *Laelia purpurata*, and *Vanda suavis* and *tricolor*, with their fine odoriferous blossoms. There are houses filled with *Odontoglossum crispum* and *O. vexillarium* showing their numerous spikes, and amongst these special attention and selection is given to cross-breeding. The *Cypripedium*-house contains fine and varied specimens, including the *C. Curtisii*, *Chamberlainianum*, *Masterianum*, *Victoriae Marie*, and several good seedlings. Further on there is a house full of *Anthurium* having large spadices, that make the whole effect very decorative. Other plants noticed as coming in in quantity are *Gardenias*, some showing large buds, and beginning to flower. A stock of *Caladium*

Villo de Hambourg and *C. argyrites* is grown, the first one having large pink-veined leaves; the second one being the small variety, with straight stalks and white foliage, the plants being well suited for decorative purposes. A fine plant of *Platycodon grandis* was to be seen, with nicely curled fronds of picturesque appearance, and measuring 5 feet in height and 6 feet in width; it has an attractive appearance not often met with, and is valuable accordingly.

Plants for exhibition are collected in a special house, and comprise large bushes of well coloured *Codivium*, and more sturdy specimens of *Dierffenbachia* and *Maranta*. The *Dragon-houses* are a principal feature in this establishment, the collection is almost complete; small and large varieties are growing well, and a selection is reserved to produce seed. The aim of the hybridiser now is to



FIG. 21. DIANTHUS PELVIFORMIS. FLOWERS RED.

get fine colour, or some other small-leaved varieties. These plants alone occupy more than half of the glass-houses covering 5 acres of ground. V. D. K.

BOOK NOTICE.

WALL AND WATER GARDENS. By Gertrude Jekyll. (Country Life Library. *Country Life*, 20, Tavistock Street, Covent Garden; and George Newnes, 7 to 12, Southampton Street, Covent Garden.)

AMONG the many ladies who now write about gardens concerning whom our contemporary *Punch* had some wise words lately, we are always glad to listen to Miss Jekyll. She has something to say, and can say it clearly; and she has every opportunity for illustrating her books handsomely.

Wall and Water Gardens is, naturally, not so much for the owners of small plots as for dwellers in the larger country houses, where acres are under treatment. The wall garden may of course be made the habitat of many a beautiful wild or imported flower, which must be set, as in a rockery, where plenty of soil can be made available for the roots. In swampy places *Ferns* luxuriate, and in actual water, it is hard to find anything more appropriate and beautiful than the *Nymphaea*. "Delightful," says the authoress, "as the

Water-Lilies are on the margin of a wide lake, they are still better in a pond of moderate size, or even in one that has more the character of a large pool. If this has a near surrounding of wooded rising ground, not of trees overhanging the water, but at such a distance as to shut in the scene and to promote stillness of the water-surface, the pond will be a happy one for its Lilies. . . . For planting Water-Lilies in ponds, a depth of 2 or 3 feet is in many cases enough, though some are quite contented with 18 inches; but if a vigorous kind is planted too shallow, as it insists on having stalks of normal length, both leaves and flowers become untidy spread. It will probably be found that growth in tanks will prove to be the more certain method of controlling the plants, for in some cases, when the roots are in a restricted space, and can be given a special soil of good loam, the flowers are much more abundant."

A good list of these plants is contributed herein by Mr. Hudson, who has made a special study of Water-Lilies. Lastly, Miss Jekyll advises us "When to let well alone"—information that is highly valuable and necessary.

Such is the brief outline of the programme before readers of the book; pleasing and characteristic illustrations, wise and readable letterpress, and a useful index. Those who know Miss Jekyll's work will not be slow to obtain for themselves access to this, her latest production.

DIANTHUS PELVIFORMIS, HEUFF.

FOR the introduction of this plant to my garden I am indebted to Mr. H. Henkel, of Darmstadt, from whom I bought a plant in October, 1899. The trials of the following winter weakened the small plant, and it was not until June, 1901, that it produced a flower in my rock-garden, although it appears to be hardy, and so vigorous when established as to produce plenty of grass. It belongs to a class of *Dianthi* which are not very popular in gardens, because of their long stems appearing out of proportion to the small heads of flowers.

In a bare, stiff border these *Dianthi* are out of place, and it is only when seen with other plants near, which take from the bareness of the stems, that their value can be seen. *D. pelviformis* is thus not a plant for the border of the usual kind; but it may be used with advantage in the rock-garden, or in a border where stiff arrangements are dispensed with. As will be seen from the engraving (fig. 21), the small blooms, which are of a deep blood-red, are different in form from those of most of the other *Dianthi* of the same class. *S. Arnold, Carsthorpe-by-Dunelm, N.B.*

TRADE MEMORANDUM.

Will you allow me a small space in your columns to warn nurserymen and market gardeners against a young man who has called upon me among others, with a plausible story of want through being out of work. "His father, he says, was a nurseryman near Cardiff, who, before his death, lost all he had. He has been supporting a sick mother, and has consequently saved no money, and having been out of work a month has become very hard up." He will decamp with all the money he can beg or steal, and anyone upon whom he may call will oblige by communicating with the police, as he is wanted here. *E. Hammond, Pilgrim's Hatch, Breckwood.*

HOME CORRESPONDENCE.

STRAWBERRY BARRELS.—We have heard a good deal during recent years of Strawberry-growing in barrels. Many persons have given it up, finding that it was not a success, but others are delighted with the results. By the desire of my employer here, I have tried a few varieties in a number of ordinary paraffin barrels, burnt out, with holes bored round the sides. We place them on iron wheels, supplied by a firm in Paris, so that we can turn them round daily, and allow all the plants to get a certain amount of sun. We planted thirty-five plants in one barrel, viz., thirty round the sides and five round the top. When the fruit is set, we thin them to about ten or twelve on each plant. Treating them in the way described, we find them to ripen very satisfactorily. Among the best varieties we have found for this purpose, none is better than Royal Sovereign, because it throws its fruit well out, away from the barrel. St. Joseph does well, and is a splendid flavour, superior to many others. Laxton's Noble also does very well in barrels, but the flavour is poor, compared with that of many other varieties. To protect the Strawberries from birds, we place a wooden hoop about 1 foot above the top of the barrel, nailed to the barrel with three pieces of wood about 18 inches long; nets thrown over this protect them beautifully. *A. R. Pearce, Braymead Gardens, Bray, Berks.*

SURREY FLORA.—Whilst the practice so common at rural flower shows, and so much to be regretted of inviting children to present in competitions huge bunches or masses of wild flowers without taste or discrimination continues, it is pleasant to note any occasional breaks, or improvement on the practice. I found such the other day at the small cottage-show in Lord Ouslow's Park at Clendon, Guildford, where three children from Merrow, one of the parishes in the show area, presented collections of wild flowers in quantity, each kind being named as correctly as well could be under existing conditions, but only with common names. One defect of such nomenclature is, that a species has so many diverse appellations just as localities differ. One girl had with great industry collected just one or two flowers of fully one hundred species, and had, of course, a remarkably representative collection, and showed how rich the Guildford district of Surrey is in native plants. But it is so evident that could the botanical appellation of each species be added, names that are universally admitted to be exact, the gain to the children would be great. I have advised in this case to limit the number of species to be shown by any one competitor, to say thirty-six as sufficient for the purpose, good staging, and the most correct naming, to be the chief points considered in making the awards. It is to be deplored that with so many people, ladies especially, who seem to live only to kill time, that some of them cannot be induced to form wild-flower instruction-classes in their localities, as in that way they might find delightful occupation. *A. D.*

DO BULLFINCHES EAT INSECTS?—As a small contribution to the much-debated question as to whether bullfinches eat insects, the following may interest your readers. We have an extraordinarily tame nightingale, to whom I often bring aphides and green caterpillars from the roses. A half-tamed bullfinch has been left in my care, and seeing him put his head on one side and greedily ate some caterpillars I was giving to the nightingale, I offered him one. For the first time he came to my hand and swallowed the caterpillar with evident satisfaction. He will even leave his beloved Sowthistles for me, but he refuses raw meat, which the nightingale takes readily. *Janet Ross, Florence.*

PEACH EARLY ALEXANDER.—On the walls of Mr. T. F. Blackwell's kitchen garden, at The Cedars, Barrow Wood, a tree of this variety is fruiting very satisfactorily; and Mr. J.

Dinsmore, the gardener, considers it to be a variety which should be planted extensively with other kinds of wall fruits not requiring protection, his experience of it having been always satisfactory, although in point of size, colour, and flavour, the fruits produced this year are rather better than in previous years. *J. O'B.*

CABBAGES BOLTING.—Your correspondent in the *Gardeners' Chronicle* of July 6, who seems to give exposition to the confidence he has in his knowledge of the above subject, and in the virtues of "our Early Market," has said nearly all that is to be said on the subject, and most of which has been said before. The reason given by gardeners is almost universally that—among others mentioned by Mr. Alfred Watkins—viz., the seasons, which have a great deal more to do with bolting than any question as to variety, or even as to the mode of growing the seed. Cabbage-growers of different districts have each a particular date at which they sow summer Cabbages. If it is sown too early, and an abnormal season should follow, such as a prolonged winter, &c., it is considered that a percentage will bolt; so that particular care is taken to sow the seed in good time, in order to secure an early crop, whilst any extreme in this direction is avoided to prevent bolting. Some gardeners find that, when convenient, pricking out the plants from the seed-beds as soon as they are ready before finally transplanting, tends to minimise the risk of bolting in the spring. *R. B. McCombie, Teddington.*

MILDEW ON THE GRAPE-VINE.—Your correspondent, Mr. S. Williams, Bodnet Hall, Market Drayton, seems to have developed a strange theory respecting mildew on Vines. I should say his remedy, and washing or wiping the glass to destroy mildew, would have about an equal effect to that of cleaning a cottage window to cure a case of scarlatina. Mildew on the Vine in a properly constructed and heated viney never ought to be seen, and it never is with proper management. It is produced by cold draughts, and a cold, stagnant, damp atmosphere. The so-called Cucumber and Melon disease is one of those preventible diseases, prevented by proper methods of culture, and is due to the improper methods pursued. A sudden fall in the heat, or the application of cold water at a critical time, will produce it, as I have seen frequently. I have never had any disease on Tomatos, but I think, as they are of a soft, succulent, free-growing nature, their troubles come with improper application of water; and, as a rule, the Potato-disease never shows itself unless we have a damp, sultry time about the period of the blooming. I grew last year several hundred bushels of Potatos, and was unable to find one tuber diseased, as the weather was so dry at that particular season. I know the spores of these various diseases are generally present, but they can only develop when the conditions are favourable to fungoid growth. *R. M., Newbury.*

THE SEEDING OF ASPIDISTRA LURIDA.—Messrs. H. Stansfield & Co., nurserymen, of Sale, succeeded last year in securing some seeds of *Aspidistra lurida*, which were duly sown, and which germinated; and by the second week in July of the present year, sixteen plants had appeared above ground. In 1899, this firm obtained thirty seeds, which were duly sown, but they did not succeed in obtaining a single plant from them. As their method of management of seedlings may have an interest for some readers of the *Gardeners' Chronicle*, I have obtained from Messrs. Stansfield & Son the following particulars. From the time of flowering, it takes from six to nine months to mature and ripen the seeds. The pods, which are of a bright orange colour when ripe, contain from one to nine large seeds, and they burst naturally when the seeds are ripe. The seeds were sown in August last, in a sandy compost, the pots were stood in saucers which contained water to about one-fourth of their depth, and the saucers

were placed on hot-water pipes, where they remained until May, when the seedlings began to push through the soil. One seed, which was evidently overlooked, germinated while lying upon the surface of the soil, though uncovered and unnoticed. When discovered, it had put forth roots to the length of six inches, but it is several months later than the plants raised in bottom-heat, and will not show above ground for another month or more. The seeds were taken from a green-leaved form; and they were allowed to dry for a week in the sun before sowing. *R. D.*

WEATHER LORE FOR AUGUST:—

"Hot August sun and happy August days!
Fain would I bear your memory in my heart
Through winter snows and dark autumnal ways,
Long after summer and her train depart."
"All the tears that St. Swithin can cry,
St. Bartlemy's mantle wipes them dry."
"Dry August and warm
Doth harvest no harm."
"A wet August never brings dearth."
Italian.
"August rain gives honey, wine, and saffron."
Portuguese.
J. C.

ERIGERON COULTERI.

THIS promising plant was received from Mr. Amos Perry, of Winchmore Hill, early this spring, and the engraving (fig. 32), shows the first flowers it produced in my garden in June last. So far as one's short experience goes, I look upon it as one of the most promising hardy flowers introduced into cultivation this season. The flowers are of a soft white, and they possess all the elegance of petal we associate with the best of the many *Erigerons* in our gardens. It is of close, tufted habit of growth at the base, and sends up stems bearing several flowers, to the height shown in the engraving. It is a native of Colorado, and ought to be perfectly hardy in our gardens. The *Index Kenensis* refers us to Porter and Coulter, *Fl. Colorado*, 61, a work not in my possession at present. In its general appearance it reminds one of a dwarf-growing *E. speciosum*. *S. Arnott, Carsethorne-by-Dunfries, N.B.*

LAW NOTE.

DAMAGES FOR DESTRUCTION OF CHRYSANTHEMUM BLOOMS.—Sheriff-Substitute Sym, Perth, has issued his decision in a case of unusual interest to the gardening profession. James Boisant, head gardener, Castle Huntly, Longforgan, as an individual, and also as an assignee of his employer, Mr. Armitstead, sued the Caledonian Railway Company for £100 in consequence of damage to valuable Chrysanthemum blooms entrusted by him to the defenders for conveyance to the Edinburgh Chrysanthemum show in November last. A special van had been engaged for the blooms. While the van was being shunted at Longforgan it was run into and disabled by the shunting engine, with the result (as alleged by the pursuer) that the boxes of blooms were thrown violently from one end of the van to the other, spilling the water supplied in tubes to keep the blooms fresh, and many of the blooms were found crushed and cut, and many of the petals shaken off. The blooms were 141 in number, picked from about 600 plants of the choicest, newest, and costliest varieties. Expert evidence was given by Mr. McHattie, Superintendent of Parks to the Corporation of Edinburgh (who was a judge at the Cor-

show in question), Bailie Melville, President of the Dundee Chrysanthemum Society, and others. The Sheriff finds that the damage suffered by the pursuer consisted of loss of the chance of gaining the Edinburgh City Cup and other prizes, with the accompanying loss of money, loss of professional distinction and advertisement, and partial loss of time, labour, and expense devoted to the production of the blooms, which may be moderately estimated at £60, and finds the defenders liable to the pursuer to this sum in name of damages. *Scoltman.*

The Week's Work.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Unheated Houses.—The fruits will now have stoned and started their second swelling. As soon as they show signs of ripening, syringing must cease, but the trees will still need water at the roots, and the borders should be damped, as a moist air is necessary for the foliage. Afford copious supplies of liquid-manure to trees swelling their crop. The fruits must be disposed so that they will receive light and air from all points as far as practicable. Keep the growths thinned out, that every shoot may have space for full exposure to light and air. Syringe early in the morning, admitting a little ventilation, which may be frequently increased as temperature out-of-doors becomes higher. If it is desired to accelerate the ripening of the fruits, keep the temperature of the house through the day at 80° or 85°, but always with ventilation, and close early to maintain the temperature, but not to raise it above 90°. Syringe again in the afternoon, and supply the roots with water and moisture as often as necessary. If thinning was attended to early, the fruits will be of a good size before stoning is completed. When that stage has been passed, the crop may be thinned finally.

The Pinery. When pits and houses become vacant, before they are again filled with plants, the interior, including the glass, should be well cleansed, and if the bottom-heat is obtained from hot-water pipes, the plunging material, whether of tanner's bark or tree-leaves, should be removed if much decayed. The plan I adopt here is to sift the finer particles out of the old material (bark) with a sieve having $\frac{1}{2}$ -inch meshes, and adding new material to the rough part, and by doing it in this manner the heat is easily regulated. All brickwork should be washed with sealing water, and afterwards brushed over with hot lime-wash. The wood and ironwork should be cleansed with soap and water, using a brush, and keeping the sappy water as much as possible from the glass, which should be cleaned inside and out with water only. If necessary, the wood and ironwork may be painted, and the roof made water-tight.

Potting Pine Plants.—Suckers which were potted in June last will have filled the pots with roots, and will be in need of repotting before the roots become matted together. Queens and Black Jamaica Pines should be placed in 10-inch pots, and Cayennes and those of stronger growth in 11-inch pots. Let water be applied to the plants immediately after the repotting, and plunge them in a bed having a temperature of 85° to 95°. There is no greater mistake in growing Pines than to crowd young plants together, so that they become drawn and weakly. Give attention to the bottom-heat of beds that have been recently disturbed or upset by the removal or re-arrangement of the plants, not allowing the heat to exceed 90° at the bottom of the pots, without immediately raising them, too much bottom-heat having a most disastrous effect on the Pines bearing fruit, or those having the pots filled with roots. Examine the soil, as regards moisture,

twice a week, and maintain a moist, genial, well-ventilated atmosphere. The conditions are, at this season of the year, so favourable, that the plants grow with great vigour, therefore discontinue the use of shading, and admit air plentifully when the temperature ranges from 85° to 95°, affording the fruiting plants a night temperature of 70° to 75°.

THE FLOWER GARDEN.

By T. H. STAFF, Gardener to Lord Poltulloire, Poltulloire Park, Exeter.

Poet's Narcissus (Narcissus poetiens).—If the beds of those bulbs which may be grown to furnish cut flowers are showing signs of exhaustion, the present time is suitable for lifting the bulbs and selecting the best and

blooms. This work holds good, whether the plants are to be grown in cold frames or in the open. Keep the soil stirred, and in dry weather afford water freely in the evening. If sprinkled daily, and the under-sides of the leaves are wetted with an elbowed syringe, that persistent pest on Violets, red-spider, will be prevented from doing much harm.

Climbing varieties of the Rose, as the plants pass out of bloom, should be deprived of the wood of this season that has flowered, and the new shoots that will flower next year laid in. Crimson Rambler, Alister Stella Gray, the Dawson Rose, and similar free-growing Roses, should, if established, be freely thinned, and sufficient space afforded the strong shoots for development. Such Roses have a good effect when in bloom if plenty of space be afforded them. Gloire de Dijon, Cheshnut Hybrid, Kaiserin Frederic, and Reine Marie Henriette will not require so free a use of the *scieauze*, a partial shortening back, or cutting back close an occasional shoot, being sufficient. After tying most varieties of climbing Roses for covering arches of iron, exposed to north-east winds, I have found none so satisfactory as the first three varieties; while A. S. Gray is unequalled in this section for fragrance. After thinning, manure in some form should be applied, and water afforded frequently, as well as a light mulch.



FIG. 32. ERIOGONUM COLIFOLIUM. FLOWERS WHITE.
(See p. 198.)

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. J. MEASURES, Esq., Cambridge Lodge, Flimkien Road, Camberwell.

Heating Apparatus, &c.—A very important matter that should receive attention at this season is the condition of the boilers and heating apparatus generally. Now that the weather is likely to remain warm for several weeks, all necessary repairs can be carried out without the plants taking any harm. It is preferable to have the inconvenience of having no heating apparatus now than at a later part of the season owing to a preventable break-down. The valves will need repacking, air-taps put into workable order, and burnt-out furnaces replaced with new ones. It is good practice to drain off the water from the pipes and boilers once a year, and thus convey away a good deal of rust and the sediment from the water. "Anti-corrosion" may be placed in the boilers when at length they are refilled and the fires lighted, which in a short time will dissolve the incrustation that nearly always takes place in those parts that are exposed to the greatest amount of fire-heat.

Small-growing Laelias.—*Laelia pumila*, J. Bayana, L. praestans, and their hybrid varieties, being now in active growth, will require closely looking after in the matter of water at the root. Their smallness fits them for planting in hanging-baskets or shallow earthenware pans; and being mostly suspended near the roof of a house, where the circulation of air is greatest, and the sun has a drying effect, the compost soon gets dry. The afternoon is the best period of the day in which to apply water to basket plants, as the material is not then likely to remain for any great length of time in a dry state. Although regarded by most cultivators as suitable plants for the cool-house, better results may be obtained if slightly warmer conditions are afforded them as soon as growth begins.

Cattleya Eldorado.—The flowers of this species are not so large as those of the members of the *Cattleya labiata* group, but they appear at a season when flowering Orchids are not numerous; and where a succession of flowers is required throughout the year, *C. Eldorado* can scarcely be dispensed with. It is a plant of easy culture. There are plants here of the type and of the white-flowered varieties, which have been in this collection for many years, which are satisfactory in every point. It is found that the plants give most satisfaction when they are placed in baskets and suspended from the roof. The plants make their growth in the summer months, and produce their flowers before the growth is matured—that is, gene-

finest for replanting. The second size bulbs may be planted by woodland walks or on turf. The small bulbs may be grown on in the reserve garden, or thrown away if the stock is sufficient for the needs of the place.

Early-flowering varieties of Narcissus, such as Early Major, Baze-lman major, and princeps, may likewise be lifted and replanted, if they have been three or more years in their present situation. When Narcissus flower badly, or not at all, the time has arrived when replanting is very necessary. Narcissus and *N. jonquilla* do well when they are planted in the shade of espalier fruit-trees. Such bulbs, when of large size, are very suitable for forcing.

Violets. Examine the plants frequently, and remove every runner found on the plants, so as to give strength to the crowns, and large

rally during the month of August. The plants commence to make new roots almost immediately the new growth has reached maturity, and any needful potting or top-dressing should then be attended to. The drainage of clean crocks should be ample in quantity; the potting-compost consist of good turfy peat two parts, and chopped sphagnum-moss one part.

POTLANTS UNDER GLASS.

By D. FLINTS, Gardener to HUSSEY PARK, Esq.,
Preston Hall, Loughborough.

Streptocarpus.—Let the seedlings be shifted into 48's, and be placed in an intermediate temperature, and near to the glass, affording them shade in bright weather, and frequent syringings whilst the weather keeps hot. A compost consisting of turfy loam, leaf-mould, and dry cow-manure, and good drainage should be afforded. Till established, apply water with care, but afterwards more liberally. Weak liquid-manure is beneficial till such time as the flowers appear.

Ixoras.—As the earlier blooming species and varieties pass out of flower allow the soil to become dryish, and then carry out the pruning required to give them good-formed heads. When growth has re-commenced, let the plants be repotted into larger pots, and endeavour to let the pots be filled with roots before the winter begins. Young plants now flowering may be repotted into 32's when the bloom is past, and be afforded a place in a house having much humidity, and a warmth of 85° to 90° by day, and 70° to 75° by night. Rough turfy loam and peat in equal proportions, mixed with charcoal and silver-sand, should be used for potting *Ixoras*.

Gardenias.—The cut-back plants which were repotted, which should now be growing freely, as well as the plants raised in the spring of the present year, should receive liquid-manure once a week. Pay regular attention to syringing the foliage, and occasionally use the petroleum-emulsion. When growth is finished, afford more air, so as to mature the young wood; for unless this be done, flowering will not be satisfactory.

Rouan Hyacinths.—If flowers are wanted in November, the bulbs should be bought and potted forthwith. These early-potted bulbs take a longer period from potting to flowering than those potted much later in the season. A suitable compost will consist of loam three parts, leaf-mould one part, and some dry cow-manure and sand. Place five or six bulbs in a 6-inch pot, with a pinch of silver sand under them, and fill the pots with compost, making it moderately firm. The apex of the bulbs should be visible. Having potted the batch of bulbs, afford water to the soil in quantity sufficient to wet the soil throughout, and when drained, plunge them in a bed of fine coal-ashes 6 inches below the surface. In six to eight weeks they should be inspected, and those with the most roots removed to a cold frame, and slightly shaded for a few days, and then place them in the forcing-house. The practice adopted by market growers is to start the bulbs in boxes filled with soil, and put up or place in baskets, when they can be lifted with plenty of roots. The method does not differ in any other particular from that pursued with the bulbs when grown in the ordinary manner.

THE HARDY FRUIT GARDEN.

By C. HIGGINS.

The March-ling Cherry.—The very warm weather of July has hastened the ripening of the fruits, and rendered it necessary that the tying or nailing, or otherwise securing, of the young growths should have attention before nets are put over the trees. If the shoots are too numerous to be properly laid in, remove some of them, and fasten in the remainder thinly, so as to permit the growth to ripen properly. The shoots towards the centres of the trees may be fastened in temporarily with short lengths of Privet-twigs, or the dried stems of last year's bracken. The leading shoots should, however, be secured with nails and

shreds. If the points of the shoots are infested with black-fly, dip them in strong quassia-water, and the next morning syringe the entire tree with clean water. When the nets are put over the trees, let them hang from the coping or the top of the wall, and keep them a yard or further away from the base of the wall by light poles set afloat, so that the gatherer may easily get at the fruit, &c.

Budding.—The operation of budding may be carried on during the next few weeks; and after the late heavy rains the bark should "run" readily. Although not much practised in private gardens, budding may sometimes be employed as a means of restoring the symmetry of a tree, or of securing a new or desirable variety. Peas, Plums, Peaches, and Cherries, are all equally amenable to budding. Where bare spaces exist in the framework of a tree, the insertion of a few buds will remedy the defect, and in a season or two will restore the proper balance of growth in the tree. Where stocks are grown specially for budding, the method adopted should be similar to that employed in budding Roses, the young stock being allowed to remain at full length until pruned back to within a few inches of the bud at the winter season. By allowing an outlet for the sap by growth extension, the inserted fruit-bud remains dormant throughout the autumn, and starts away strongly in the spring. If the rainfall has been insufficient to moisten the soil, it will be advisable to apply water to the roots of the stocks before budding is begun.

Thinning the Fruits of the Apple.—Although the Apple crop in general is not a heavy one, trees of the early culdinary varieties, such as Lord Grosvenor, Lord Suffield, and Eckinville Seedling, are carrying good crops, and the fruits may advantageously be thinned by degrees, the thinnings being used in the kitchen. This will give the remaining fruits a better chance of growing to a good size; and by thinning early the fruits attain a much larger size, than when the operation is left till a later date. The drought was much against the swelling of the Apple, and many of the fruits have dropped from lack of moisture in the soil; hence the recent rains will greatly assist the trees, besides cleansing them of aphids, &c. If very large fruits are desired, the ground should be copiously watered, and weak liquid-manure applied occasionally.

THE KITCHEN GARDEN.

By J. MAINE, Gardener to the Hon. MARK ROLLE,
Bretton, East Budleigh, Devonshire.

Carrots.—The plants must be afforded plenty of water, otherwise they are apt to run to seed; and when they have reached the height of 15 inches, earth them up similar to Celery, first tying up the leaves in the manner in which Cos Lettuce is tied up to blanch it.

Cora Salad.—This plant is appreciated by some persons as a salad, and it certainly affords a change, and is valuable when good Lettuces are scarce. The seed should be sown on ground that has been manured for some previous crop, which has been dug one spit deep, and made firm by trampling it. The seed should be sown in drills 1 inch deep, and 9 inches apart. When large enough to handle, thin to 4 inches apart. Afford water freely in dry weather, and frequently hoe the ground. Seed may be sown till the end of the month of September in the south.

Endive.—Sow about present date for chief winter crop, and again in ten days. If green-curbed and improved round-leaved Batavian are sown, thin former to 12 inches, according to the size to which it grows, and transplant, if required, to the same distance apart, and afford plenty of water till re-established.

Parsley.—The June sowing should now be thinned to a distance of 6 or 8 inches from plant to plant, doing this in showery weather, if possible, after the bed has been afforded water. The thinnings may be transplanted if this be necessary, but only such as have the tap-root intact. About this date I plant a row 50 yards in length close to the foot of an

unheated Petch-house wall facing south, where the plants get overhead protection of the front lights, which are opened wide from the end of August till the first week in March. Some gardeners prick the seedlings out on a warm border and afford frame protection in hard weather.

Lettuce.—Sow a good breadth of Sutton's Mammoth or Veitch's Superb Cos and All-the-Year-Round Cabbage-Lettuces during the coming week; and another sowing of Brown Cos, Hick's Hardy White Cos, and Hardy Hamersmith Cabbage in a fortnight. Lettuce may have abundance of water in hot weather.

Sundry Operations.—Examine plantations of Broccoli, Brussels Sprouts, Cauliflower, Broccoli, Savoys, &c., and fill up gaps in the lines. Broccoli and Savoys may still be planted. After a period of three weeks of scorching-sunshine, heavy rains have fallen, so that we can dispense with the water-can for the present. Get out Coleworts as land becomes vacant, examine the hearts of these, in fact all the Brassicas before planting, as so many of them are blind, or they have bolted owing to the drought. Break off the flower-stalks of Scorzera and Salsify.

THE APIARY.

By EXPERT.

The Honey Season.—In the South of England bee-keeping will be drawing to a close, and in many cases I fear poor returns have been the general rule, particularly where bees were not fed in the spring-time; and many who have not troubled to do so must see now how very important it is that a little slow feeding should be done, because it keeps the bees slowly working, and they are not using all their stores. One cannot but notice in these short seasons of ours that when the bees have filled up the body of the hive (where no feeding has been done), that the time has gone for working sections or run honey.

Sections.—All sections should be taken off the hives now that the season is over, or the bees will commence to take them down and make them unsalable. All sections should be handled as gently as possible, and kept in the same position as when taken from the hive, otherwise the honey will run down from unsealed ones; this causes them to look very bad. Another care should be given not to put your finger through the section at the top when taking it from the hive; this, too, looks very bad. A section for market should be kept clean, all scraped and wiped with a wet sponge; nothing looks worse than to see good sections of honey placed on the market in a dirty state—it does not give the seller a chance at all. How can one expect to sell honey from a window when the section does not look fit to eat? And then one wonders how it is more orders are not received. Much has been said lately about the "no sale of honey," but I say there is no trouble whatever if the above remarks are fully carried out. Sections should not be forced on the market all at once; it will pay to hold them over for a time, but not for them to get bruised and dirty meanwhile.

Extracting Honey.—When extracting do this as far away from your hives as possible, otherwise you will cause your bees to commence robbing, and once this is going on you will find it a very hard job to stop. All shallow frames when extracted should be placed back on the hive to be cleared up, and then taken away and wrapped up in brown paper to prevent the moth from getting to them, placing a little naphthaline inside at the same time. Do not take too many frames from the body of the hive, or you will have to feed them later on in the autumn; it is a great pity to take away what is really the very existence of the inmates, and natural food must be better than artificial. All hives should have their entrances closed a little, and a careful watch kept for wasps, &c.; eight or nine frames should be plenty to winter on, too many frames left will lessen the heat of the hive.

SOCIETIES.

ROYAL HORTICULTURAL.

JURY.—A meeting of the Committee of this Society was held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last. There was a pretty display that well furnished the Hall, but did not overwork it, and in this respect, as well as in the smaller number of visitors that were present than usual, it could be seen that the holiday season has already affected these meetings.

ORCHIDS were very few indeed, and only two awards were made to Orchids, a First class Certificate to *Cypripedium Mandin* magnificum from Mr. LAW SCHO-FIELD, and an Award of Merit to *C. Argo* Rothschildianum from Mr. NEWMAN C. COOKSON.

The FLORAL COMMITTEE recommended Awards of Merit to a double-flowered variety of *Cypripodina paniculata*, to four varieties of *Carnations* from Mr. TEKNER, Royal Nurseries, Slough; to a strain of *Cloxinans* from Messrs. STURROX & SON, to *Montibertia Germanica* and to *Rose Eugene Lesaulce*.

The FRUIT AND VEGETABLE COMMITTEE recommended Awards of Merit to a large yellow-fruited Gooseberry named *Columbia*, from Cobham Hill, Gravesend, and to a patent bottle for preserving boiled fruits. Messrs. J. WHITE & SOSS showed a grand collection of Gooseberries.

In the afternoon a LECTURE upon "Some of the Plants Exhibited" was delivered by the Rev. GEO. HENSTRAW.

Floral Committee.

Presid.—W. MARSHALL, Esq., Clacton, and Messrs. Chas. T. Druery, H. B. May, E. Dean, G. Bentley, J. J. Macdonald, Jas. Walker, Chas. Dixon, R. C. Norton, Herbert J. Cuthbert, Geo. J. Shea, W. P. Thomson, E. H. Jenkins, J. H. Hill, Harry Turner, Geo. Paul, H. Selie Leonard, E. T. Cook, Geo. Gordon, E. J. Selton, and Ed. Mawley.

Mr. H. J. JONES, Ryebrook Nursery, Hatfield Green, Lewisham, exhibited a very handsome group of plants, in which there were three large specimens of *Himca elegans*, some fine single white-flowered *Petunias*, *Antypha hispida*, *Cochlosa*, *Pennis*, *Cobham*, and *Campaula Maya*. The most conspicuous plants, however, were the *Heliotropes*, several new and seedling varieties being shown. *Saxias* almost white and is freer and has much larger flowers than the old White Lady type. *Chamaejasme*, *Crocus*, *Pennis*, *H. Berlin*, *Crocus*, and *Madame Nelson*, are coloured varieties differing in degree of tint. Silver Banksian Medal.

Messrs. JAS. PAUL & SON, Rosehill Park Nursery, Norwood Road, London, S.E., exhibited a group of *Achimenes*, in pots, the colour of whose flowers varied from white to deep purple.

Miss EASTBROOK, Fawkham, Kent, made a floral display of flowers of zonal and Ivy-leaved Pelargoniums, arranged in a basket and in espaliers, with suitable green relief.

Messrs. PAUL & SON, The Old Nurseries, Chesham, made an exhibit of Roses and Philoxes. The Roses were shown in bunches in bottles, and amongst the varieties we noticed very fine specimens of *Souvenir de President Carnot*, *Alfred Colomb*, *Mrs. Sutherland Crawford*, *Madame A. Chateaux*, *Camons*, *Rose Lamberton*, a curious crimson Rose, with white margins to the petals; *Maman Cochet*, *Liberty*, *Madame Jules Grévy*, *Waltham Standard*, &c. Among the herbaceous Philoxes were choice varieties with white, rose, purple, pink, blue, and carmine flowers, and *Combed*, having flowers of nearly scarlet colour (Silver gilt Banksian Medal).

Mr. A. W. WADE, Riverside Nurseries, Cobham, exhibited a collection of Sweet Pea flowers in nine-tin varieties. Some of the flowers were shown in shallow ornamental basins, in the centre of which were weights with rings that supported the flowers in a very natural position (Silver gilt Banksian Medal).

Messrs. H. CASSELL & SOSS, Swanley, Kent, exhibited a grand group of tuberosus-rooted *Begonias* in pots, all of them double-flowered varieties. Some exceedingly good varieties were *J. W. Siam*, almost scarlet, with prettily crumpled petals; *Rosa White*, delicate blue colour, very broad petals; *Dr. Sanson*, deep crimson; *Lady E. Mohl*, salmon-pink, with fringed petals; very fine, *Lady Baltimore*, primrose yellow colour; *Countess Waldenrose*, pure white; *Mary Eddy Vivian*, salmon-pink, with white centre (Silver gilt Banksian Medal).

Messrs. STURROX & SOSS, Reading, furnished one of the long central tables with a collection of *Cloxinans*, in a number of very choice varieties, and an Award of Merit was recommended to a strain with minutely

spotted flowers. The plants had been cultivated from seeds sown as recently as January 29 last. Among the varieties were none but the following:—Spotted Ensign, white, with leucophaea-edged spotting; Duke of York, white and scarlet; *M. E. King*, white, with light blue ring; *Scarlet Queen*, a large covered with crimson on a white ground; *Princess Mary*, white, with rosy ring; *Reading Scarlet*, a very richly self-coloured variety; *Prince Edward*, a large flower with white ground freely marked with rich spotting of purple; *Suttons Purple*, very rich in colour; *Her Majesty*, pure white; *Violet Queen*, one of the most distinct of the spotted series, and many others. (Silver gilt Flora Medal).

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, London, exhibited a group of hardy flowers, in which *Hybaceous*, *Phloxes*, *Gladioli*, *Lilacs*, &c., were conspicuous. We noticed, *Crassula Cooperi*, a perfectly hardy species of the rockery, dwarf, about an inch high, with long spotted leaves, and white flowers with red bristly calyxes; *Campaula mirabilis*, *Kuniphoa Hodgkintonii*, *Berberis* with yellow flowers; *Camas*, crimson yellow; *Berberis*, a Composite ground, about one foot high, with yellow single flowers; *Mila biloua*, &c.

Mr. H. B. MAY, Royal Road Nurseries, Upper Talnott, London, made an exhibit of *Campaula scodifera*, of which he has now several varieties, including *C. albo pallida*, *superba*, and *capitata variegata*, the latter with variegated foliage. *C. M. M.*, and the curious hybrid, *C. B. M.* (both of which are two last named plants), have been figured in *The Gardeners' Chronicle*. All of the Campaulas were staged a creditable way. *Palms* and *Terms*. (Silver Banksian Medal).

Mr. AMOS PERRY, Royal Plant Nursery, Windmead Hill, staged a group of hardy flowers, including some good *Philoxes* with the most remarkable variegation of the exhibition. The collection of *White Lady* flowers, many of which are new varieties. They covered 2 1/2 ft. of space, and were surrounded with flowering specimens of *Stemmatocoma*. (Silver gilt Flora Medal).

SIMON MORRIS, 41, Wetham Hall, Thetford, showed plants and seeds of a large flowering yellow *Carnation*, species of *Yucca rosea*, and named *M. T. Morris*.

Mr. T. W. CARRON, Royal Cottage, Windmead Hill, showed *Carnations* of *Perla*, *Calcan*, white, and *Ornithocharis* crimson.

Composita *Heldreichii* with its long, yellow, tubular flowers, was in great display by Messrs. ROMAN VETTER & SON, Exeter.

Messrs. WALTER WOOD, Kilmield Gardens, Colchester, made a very fine display of *Carnations*, *Gladioli*, and other hardy flowers in choice varieties. (Silver Banksian Medal).

Mr. CHAS. TURNER, Royal Nurseries, Slough, exhibited four dozen double blooms of *Carnations* and *Presides*, and a large number of some good border varieties, several of which are noticed below under "Awards."

Messrs. JAMES VEDDER & SOSS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited beautiful blooms of *Rhododendron roseo-jasminiflorum* hybrid, showing interestingly some green ground.

Campaula *Walteri* was given an Award of Merit last year when shown by Mrs. WILMOT, Weyley Place, Great Wares, Essex, we again show that both. The plants were in flower, and have a somewhat slender habit of growth, the tallest being about 1 foot high. The flowers are usually double, occasionally almost single, and of a pretty shade of blue-purple.

Messrs. W. PAUL & SON, Waltham Cross, Here, showed extensively double *Philoxes* in great variety and beauty of development and colouring, obtaining a Silver Flora Medal. Of these we mention may be made of *Frog-train* (a very long, an exquisite pure white flower, bearing a perfect oval of six inches diameter and 6 inches wide, of distinct tint, and very beautiful) and *White*, double, of distinct tint, and very beautiful, the latter being about 1 foot high. The flowers are usually double, occasionally almost single, and of a pretty shade of blue-purple.

white, Hecla, white and blue, and *Kosuth* (rosy crimson), and a dense truss of flowers of all colors.

Messrs. WINE & BAKER, date Chisney, 542, in Witten, exhibited *Hydrocotyle* blooms in the form of an oval number of stems and as spikes, the aperture of the flowers leaving little to be desired. There were hardly any signs of the shredded tuners on the leaves, and we may assume that in the case of this nursery, more or less have been found to be a destructive pest. High colour in the flowers were the rule, and only one yellow coloured, and but one white variety, were shown. If the flowers had a faint, it was in the fact of size on the guard petals, which gave the blooms a shaven unfinished look, at least, to heretical eyes. In a rose-coloured variety a white and a very deep crimson almost black, this defect was not so apparent (Silver gilt Banksian Medal).

Messrs. PARK & SOSS, King Street, Covent Garden, showed blooms of hardy border flowers in some variety, or novelty, we may instance *Eclimias chalcidomera* rubra, double B. var., the full coloured *Homocallis Krasno*, and *H. disticha*, double B.; well developed flower-head of the white-flowered *Agapanthus*, *Meriania tubulosa* modica, a pale blue-coloured flower; *Bacopa maritima*, a few Water Lilies shown in square shallow tanks; *Platyodon Martoni* with deep blue flowers, and a number of shrubby *Philoxes*, some *Saccolabias*, *Lilacs*, *Heliotropes*, *Sweet Peas*, &c.

Awards of Merit.

C. Walteri *Ch. M. G.*. A good border variety, with yellow ground, flower, veined deeply with red. From Mr. TURNER.

Campaula Lady Baskin. A yellow ground flower, flaked and edged with rose colour, useful for cultivation in border. From Mr. C. TEKNER.

C. Walteri *Herzog*. A yellow ground flower, flaked and edged with rose and purple. From Mr. C. TEKNER.

C. Walteri *Deep*. The flowers have a ground colour of buff yellow, with very little edge of red colour, also a border variety. From Mr. C. TEKNER.

Gladioli. A beautiful spotted strain shown by Messrs. STURROX & SOSS.

Agrostis *peruviana* *doubt B.* Messrs. D. S. THOMSON & SOSS, Wembley, showed a number of spikes of the plant, some 3 ft. in length. It is a perfectly double variety of the species with pure white flowers. The novelty will be of great value for use in spray making, and for a variety of purposes.

Anthyllus Germania. The flowers are rich reddish-orange colour, with a little red of the throat and no tinting whatever. Shown by Mr. BENNETT & SON, Holmwood, Chesham; and by Messrs. PAUL & SON, Old Nurseries, Chesham.

Rose Eugene Lesaulce. A polyantha variety, with yellow flowers 1 1/2 inch across, double, a pretty well-known garden Rose. Shown by Messrs. PAUL & SON, Old Nurseries, Chesham.

Orchid Committee.

Presid.—JAS. VEDDER, Esq., in the Chair, and Messrs. JAS. VEDDER, Esq., Mr. MOORE, Dr. B. CRAWLEY, H. M. PARRELL, E. W. BODDIE, H. T. PERL, E. HILL, W. GIBBY, W. H. YOUNG, T. W. BOND, H. J. CHAPMAN, H. A. TRACY, and P. SANDER.

Messrs. JAS. VEDDER & SOSS, Royal Exotic Nurseries, King's Road, Chelsea, were awarded a Silver Flora Medal for a very interesting collection of hybrids, principally *Catleya* hybrids, among which were *C. C. Callistolepis* *fl.*, *purpurata*, *C. Warszewiczii*, and four plants of the line coloured *C. C. Callistolepis gemmae*, two specimens of the yellow tinted *C. C. Aysnisi*, *C. Triemerii*, *E. Kaufmanni*, *C. C. Chima*, *C. Warszewiczii*, *C. C. elegans*, *Turcoman*, and a fine white petalled form of *C. C. Dinallianii*, *fl.*, *purpurata*, *X. C. Lambdeniana*, the tip of which was marked with purple. Good specimens of *Catleya C. Alanda* *fl.*, *purpurata*, *Warszewiczii* were also shown.

Sir FREDERICK WIGAN, Bart., Claydon, East Shropshire, Mr. W. H. Young, staged his collection of *Catleya C. W. Wigan* (*Schilleriana C. Pompanoniana*), a very showy hybrid, with purple-tinted sepals and petals. The lip is formed much like that of *C. Schilleriana*, the front being veined with crimson purple, with a yellow blotch in the centre, the handsome natural hybrid of *C. W. Wigan* (*Schilleriana C. labata* *Warszewiczii*, *C. porphyroloba* (*trifasciata*) *superba*, *C. C. Alanda*, a large, light coloured form of *C. Warszewiczii*, *Lulu* *Catleya C. Henry*, *Graciosa*, and flowers of *Cypripedium nymphaea*, *C. consolida*, and *C. Gleditsia*.

W. TENSLEY, Esq. Monkshold, Bromfield, Brighthelm, exhibited *Catleya Eldorado* (*Monkshold*) variety, with bluish-white flowers, having an orange coloured disc. The plant being a weak one the flower seems small.

Capt. G. W. LAW SCHOFFIELD, New-Hall-Hey, Bawtenshall, Manchester (Mr. Small), showed *Cypripedium* x *Stottium* (Charles-worthii - canthamum-superbium), a fine flower of good substance. Upper sepals white, with a small green base, the middle area tinged and striped with purple. Petals and lip tinged with brown-purple.

C. J. LEVENS, Esq., Warrnam Court, Dorham (Mr. Dimeson), showed four fine plants of *Cypripedium* x *Chlorobryum* Warrnamense (Phippiense x Curranii) for which he received an Award of Merit, December 12 1898. The large flowers had the pale line of C. Curranii, with elongated petals spotted with purple.

Awards.

Cypripedium - *Maudie* (an excellent variety) (Sunderley Livestuccum) (Hawtonum) from Capt. G. W. LAW SCHOFFIELD - A fine hybrid, distinctly intermediate between the two parents, and apparently with the free habit of growth of *C. calceolum* Sandevis. The flower, like both the varieties used in its production, had a marbled green for the ground colour, the upper part of the fine, broad dorsal-sepal and extremities of the petals being white. Plants of this hybrid had been previously shown, but the present form is the best we have observed. First-class Certificate.

Cypripedium - Mrs. Lecher's (Oakwood variety) (Arista x Rothschildianum) from NORMAN C. COOKESS, Esq., Oakwood, Wyham, Northumberland (Mr. William Murray) - A fine showy flower, with the mass-like form of C. Rothschildianum, but with the broad, yellowish-white petals, dorsal and heavily blotched with dark, chocolate purple, as in the best forms of C. Arista. The large, whitish upper sepal was closely marked with blotched lines of dark chocolate-purple. The lower sepals were similar, but have fewer lines, and the lip whitish, tinged on the face with brownish-rose. The original form, which had a yellow ground colour, and fewer lines on the upper sepal, was shown by FRANK A. REIDING, Esq., (Lubbeck, Gipsy Hill) at the Royal Horticultural Society, May 2, 1899, *see C.* - ARISTA ROTHSCHILDIANUM (Award of Merit).

Fruit and Vegetable Committee.

Present: Geo. Binyard, Alex. Chatterman, and Messrs. Jos. Child, S. Mortimer, Alex. Dean, Geo. Kell, M. Gibson, G. Norman, T. O. Lane, A. H. Peat, on W. Wake, E. Shaw Blake, and Henry Esling.

Messrs. JAS. WELCH & SONS, Royal Exotic Nurseries, King's Road Chelsea, made a grand exhibit of ten choice varieties of Gooseberries, shown in neat little baskets; the fruits being of excellent quality. On white-fruited varieties, Champagne, Bright Venus, King of Trumps, Whitesmith, Coppice Lass, Miss Nightingale, and Astrife, were noticed, and are a main article of export. Of green varieties, such as Nainit, Telegraph, Green Laurel, Pinnacled Greening, Early Green Harvey Stockwell, and surprise, can hardly be beaten, and of red varieties, Crown Bob, Warrington, Lancers, and Red Ben's Mistake, from among Scotch Hartree, and Red Champagne. The following are good yellow varieties, Golden Drop, Brown Gold, Pretty Boy, Fern, Mount Pleasant, Canon, Early Napoleon, Trumpeter, and Golden Gem. The first two varieties recently introduced by Messrs. Wrench were also illustrated by ground fruits. They are Langley Beauty, named in *Vegetables' Chronicle*, Aug. 8, 1899, p. 159, a yellow variety with few hairs, capital flavour; Golden Gem perfectly smooth, and of richer colour than the preceding one; and Langley Gage, a green variety. The exhibit was recommended a Silver Knightian Medal.

Messrs. CROSS & SON, Earlsfield Nurseries, Wisbech, exhibited fruits of Apple Early Victoria, doubtless to show the early maturing qualities of the variety, the fruits being already of very unusual size for kitchen purposes.

Awards of Merit.

Gaultheria *calabro* - This is a large, yellow fruited variety, with few hairs, and of good flavour, shown by Mr. T. R. CECILSKY, 69, High Holborn, G. J. & Co., 65, Ave. Road.

Bottle *pot* preserving tin. An Award of Merit was recommended in respect to a bottle and stopper exhibited by the FERRIS FINE GLASS BOTTLE COMPANY, 18, F. de LICA & CO., 6 and 7, Long Lane, Aldersgate Street, London, S.E. It is a glass bottle with a disc which should be only partially fixed before filling the fruit, by means of a screw band. After bottling by screwing the disc firmly on, an vacuum is caused underneath, and the pressure of the atmosphere is sufficient to keep the disc firmly in its position, although the screw band should be kept on also. To open the bottle it is necessary to make a small hole in

the disc, and thus admit air. The device is a very simple and convenient one, and makes the operation of preserving fruit by means of boiling less difficult to the amateur.

At a general meeting of the Royal Horticultural Society held on Tuesday, July 30, forty-one new Fellows were elected (making 688 since the beginning of the present year), amongst them being Lady CRANWORTH, Lady POLLOCK, the Hon. Mrs. GRETTON, the Right Hon. R. W. HANBRY, M.P., the Hon. N. CHARLES ROTHSCHILD, and CLEMENT GIBSON, Esq., M.D.

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

JULY 25.—The monthly meeting was held at St. John's Parish Room, Redland, on the above date, Mr. A. J. Hancock, president. The lecture on "Carnation Culture" was given by Mr. Skinner, of Stoke Bishop. The hearty thanks of the meeting was accorded him for his lecture.

A number of prizes for six bunches of Sweet Peas and Carnations, and for six Carnations, distinct, was awarded MRS. TALMAGE.

NEWPORT AND COUNTY HORTICULTURE.

JULY 27.—This Society held its annual show on the above date in rampy weather. The entries were considerably more numerous than those of last year, and in most cases the classes were well filled. Cut flowers were a great feature, and included Roses, Carnations, Sweet Peas, and groups of plants arranged for effect, and indoor and greenhouse plants were very good. Year classes were shown in large quantities, and were of good quality, fruit was of average quality, some stands of grapes and dishes of hardy fruit being very creditable, but Melons were generally of poor quality. There was much honey shown of good quality.

CUT FLOWERS.

For twelve varieties of Tea Roses, Messrs. S. TRESEDER & SON, Cardiff, was placed 1st with fresh blooms, its best being Model, Souvenir d'Ami, Margot, and Hon. E. Gilroy, 2nd, KING'S ACRE NURSERY CO., Hereford. Messrs. S. TRESEDER & SON also won 1st prize for twenty-four floral bouquets, and the KING'S ACRE NURSERY CO. were second.

Cactus Dahlias brought but one exhibitor, viz. Mr. W. TRESEDER, Cardiff, who staged beautiful blooms of Lord Roberts, Atlas, Aesta, LEVIN, W. T. Thomas, Florida, &c.

Carnations in twelve distinct varieties, were good from Mr. W. WALL, Tiverton-on-Avon, Bath, in 1st place; Brilliant, Nellie, Bellad, Zongara, Willie, Thos. Mrs. Hill, and Mrs. Newman, 2nd, Mr. W. TRESEDER, Mr. WALL had the best bouquets.

The best twelve bunches of hardy flowers, were from Mr. W. TRESEDER. For twelve bunches of Sweet Peas, Messrs. W. J. STOKES & SON won 1st prize.

For a collection of sweet Peas arranged in a space 9 feet by 3 feet, Mr. W. TRESEDER was the only exhibitor.

PLANTS.

The class for eight stove and greenhouse plants in bloom was won by Mr. J. CAPPER, of Cheltenham, who had Statice profusa, S. heterantha, Ixora Regina, F. Imbi, Cleocheleum, Broomlynnia, Pterocoma patens, Barmis, &c. Mr. BRYKEY, Hlanidley, Mr. W. WENTWORTH, was 2nd, with smaller plants well flowered.

Mr. J. CAPPER was also 1st for six ornamental foliage plants, showing Cotinus, Victoria, and angustifolia, Keutias Fosteriana, and Balsamorhiza, Latania borbonica, and Phlox paniculata, 2nd, Mr. BALEY, Mr. STORRETT.

With large fresh plants of Dicksonia spirata, Achromia Echinocarpa, and V. Sander-Catherine, Mero, Lepa hirta, orsata, Nephrolepis exoniensis, S. trimpunctata, &c., Col. WALTER, Mr. Powell, was a good 1st for six exotic Ferns.

The 1st prize for a group of plants 12 feet in diameter was won by Mr. J. CAPPER, and Mr. W. CARPENTER was 2nd.

Thirteen Begonias, arranged on a space 25 feet square were best from Mr. LAWSON, Mr. Long, who set up a bright, well-grown lot of plants, 2nd, Mr. WILLIAMS, Mr. W. J. Jones.

NON-COMPETITIVE EXHIBITS.

Mr. BASHAM, Fern Oak Nurseries, Bassalee, brought a fine display of fifty dishes of hardy fruit, and thirty varieties of Sweet Peas, arranged in bunches (Silver-gold Medal). Messrs. WILFRID & SON, 610, Worcester, staged four dozen varieties of Sweet Peas in good varieties. Messrs. GARREWAY & Co., of Bristol, sent a beautiful collection of stove and greenhouse plants, and the KING'S ACRE NURSERY CO., Hereford, staged Roses in

distinct varieties (Silver Medal). Messrs. S. TRESEDER & SON, Cardiff, had a good stand of Roses, arranged in bunches (Silver-gold Medal). Mr. BLACKMORE, Tiverton-on-Avon, a large exhibit of a splendid assortment of blooms of Begonia, and Messrs. HEATH & SONS, a group of Begonia and Pelargonium in pots. Mrs. HODGKINS, Beaufort Avenue, Manchester, had a collection of skeletonized leaves, Ferns, and flowers; Mr. W. TRESEDER was awarded a Silver Medal, Messrs. W. TULLIN & SON, Newton Abbot, a Silver Medal, for an exhibit of Carnations, and Messrs. JARMAN & Co., Clarend, a Silver Medal, for miscellaneous cut flowers.

BOSTON HORTICULTURE.

JULY 25, 26. Boston has held an annual flower-show for a number of years past, and as it is the centre of an extensive agricultural district, it unites with the floral display a horse and dog show. These combined have a powerful attraction for the country people, and they come into Boston in large numbers. The two days were busy, and notwithstanding the district lacked rain badly, there was a general expression of regret that the pleasure of the people was so much interfered with.

Cut flowers and vegetables are the two prime features at a Boston show. Still, fine specimen plants are grown in the locality, but Ferns, Colons, Fuchsias, zonal Pelargoniums, and others, were shown in fairly good form. Some well-flowered tuberos-rooted Begonias came from Mr. J. THOMAS; there were a few Gloxinias also in good character.

The class for a group of plants arranged for effect brought several exhibitors, but they were lacking in number, the exhibitors appearing to need an object-lesson or two in the matter of setting up groups. There were several plant classes for gardeners and amateurs.

C. W. BROWN was a leading feature, and Messrs. C. & W. Rogers of the Rose Nurseries, Peaburrough, took the 1st prize for twenty-four and for twelve varieties, and also for twelve Teas and Souvets. As it is somewhat late, the following may be taken as suitable late-flowering varieties, and they were shown in excellent condition. Star of Waltham, Caroline Te-tout, Danmark, Cho. Honor, Vert, Bessie Brown, Madeline Jas. Caplet, Souvenir Vasse (this old Rose being in excellent condition), Bladon, Duchess of Bedford, Madame Eric Gordon, Alfred Colomb, Mrs. J. Spang, Marquisess of Londonderry, Lawrence Allen, Xavier O'Brien, Prince Arthur, and Charles Leclercq. Of Teas they had Maman Corbet, Innocente Troika, Marcelle Niel, Ernest Metz, Meda, Mad me de Watterville, and others. The 2nd prizes were taken by Mr. W. H. FIETTINGHAM in two classes, and by Mr. C. T. CHAFFIN in that for Teas.

Fruit of *Hardy Begonia* plants, shown in twenty-four bunches, were another leading feature, Mr. T. B. DORRIS, a local nurseryman, taking the 1st prize with a fine assortment, and Mr. H. WALL was 2nd, such attractive subjects as Astro-rosaceus, Ladies, Delphiniums, herbaceous Phloxes, Coreopsis grandiflora, Sedum cannicola, Everlasting Peas in variety, Monticelotus, &c., were staged. Mr. DORRIS was also 1st with twelve bunches of stove and greenhouse cut flowers.

Zonal *Pelargoniums* and *Sweet Peas*, &c.—The best twenty-four bunches were staged by Messrs. H. & S. SMITH. Carnations, Begonias, Pentstemon, &c., were likewise shown.

Dahlias were represented by show, pompon, and Cactus varieties, but it is not too early to have them in fine character.

A certain amount of table space was set apart for attractive displays, the local trade competing. Mr. T. D. BRADLEY was placed 1st, and Mr. C. W. INGRAM 2nd. Very good cut flowers in several instances were shown in the amateurs' division.

Decorated tables were shown by ladies, and they exhibited some pretty designs, the 1st prize falling to Mrs. E. SWALE. The 1st prize for a bouquet went to Messrs. H. & S. SMITH, and a charming arrangement in a bowl with Lilies and lilies.

Fruit.—The better classes of fruit were somewhat sparsely represented; the best collection, which consisted of black and white grapes, Peaches, Nectarines, &c., came from the Earl of SANDWICH, Hurlingham; and Mr. W. F. CLARKE was 2nd.

Mr. J. THOMAS was 1st with two bunches of black and also of white grapes. Peaches, Nectarines, Melons, and bush fruits were in general in good character.

Touffures were very largely shown, and mainly of good character. Messrs. W. J. JOHNSON & SONS, and Mr. A. WOOD INGRAM, offered special prizes for collections and also for single dishes.

Potatoes were clean and bright in particular, and larger than might have been expected after such a dry summer.

Among miscellaneous contributions was a number of illustrations of decorations in flowers from Messrs. BALMAN & Co., 18, Goods Road.

In a spacious tent were a large number of blooms of Sweet Peas and pods of cultural Peas, competing for prizes offered by Messrs. W. J. JOHNSON & SONS, and the entries were so heavy that a spacious tent had to

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending July 27, is furnished from the Meteorological Office:—

"The weather at the commencement of the period was fine and bright over the southern and south-eastern counties, but very unsettled conditions, with frequent thunder-storms and heavy rains soon spread over the entire kingdom, and continued, especially over the inland parts of England, until the end of the week. Some of our south-eastern coast stations, however, remained entirely free both from thunder and rain.

"The temperature was above the mean generally, but only just equalled it in England S.W., and over Ireland, and was slightly below it in the Channel Islands. The highest of the maxima were recorded on the 21-1, and ranged from 56 in England, E.S., in England, S., and between 56 and 59 in the other English districts, to 75 in Ireland, N., and 60 in the Channel Islands. The lowest of the minima occurred during the middle or latter part of the week, they varied from 45 in Ireland, N., and 47 in the Midland counties, to 50 in many other districts, 52 in England, S., and 53 in the Channel Islands.

"The rainfall varied very greatly in different parts of the Kingdom. It was less than the mean over Ireland, and only a trifle more than that value in Scotland, W. and England, E.; elsewhere the fall was large, that in the Midland Counties and parts of England, S., being quite unusual. The total fall for the week was largest at Oxford and Church-toke, where 72 inches and 69 inches were respectively recorded. During a severe thunder-storm which burst over the Metropolis on Thursday, the rainfall was exceptionally heavy, at Westminster, as much as 1.8 inches was collected in the gauge in the course of about three hours and a half; and again in Acre Lane, Brixton, 0.92 inch fell between 5 p.m. and 7 p.m. on Saturday.

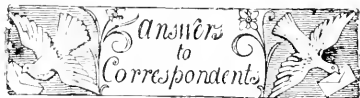
"The *baro* *sum* was much less than the mean in all districts. The percentage of the possible duration ranged from 41 in the Channel Islands and England, E., to 15 in Scotland, N., and Ireland, N., and to 14 in Ireland, S.

THE WEATHER IN WEST INDIES.

In the early part of the week the weather was cooler than at any time since the middle of June, but during the last few days there has been a return to higher temperatures. The ground still remains very warm, the readings both at 1 and 2 feet deep being about 5° warmer than is seasonable. Rain fell at frequent intervals, and to the total depth of 1.4 inch, which is equivalent to a watering of nearly 5 gallons on each square yard of surface in my garden. This rainfall, together with the moister atmosphere of the last week, has had a very beneficial effect on my lawns, which are now quite green again. The sun shone on an average for little more than two hours a day, which is a poor record for the time of year. The amount of moisture in the air has been, as a rule, greater than in any previous week of the present summer. *E. M. Roberts, July 26, 1901.*

ENQUIRY.

POTAMOGETON CRISPUS.—Will some reader of the *Gardeners' Chronicle* give Mr. Mark Webster the life history of "Potamogeton crispus"? Is it an annual reproduced by seed only? or do the roots survive more than one season? He has a pond infested with it, in which Water-Lilies are growing, and he is keeping it down by constantly cutting it, but that method only tends to propagate it. He is most anxious to exterminate the weed.



ACER NEGUNDO WITH VARIEGATED LEAVES; F.T.K. This plant may be budded on the type form, or on any variety of Acer, the operation being carried out in August, and early in September. The piece of bark, together with the bud in a mature state, may take the form of a disc or an oval, accurately fitting it on to a shoot or part of the stem of about the same age and diameter, as that of the shoot from which it was taken. Buds may be taken like those of fruit-trees and Roses, and inserted in the same manner as

are those. Winter grafting under glass may be followed. The plant will strike from cuttings of the ripe and the green wood.

APRICOTS SPLIT; J. W. M. See "Diseased Peaches" in our issue for July 13 last, p. 10.

BEGONIA RUST; E. W. B. Due to a mite. Dip the leaves in tobacco-water.

BOOKS; *Inquiritive*. No modern work exists; and Miss Hassard's is old-fashioned and out of print.—*Enchiridion, The Horticultural Directory* is published at 12, Mitre Court Chambers, Fleet Street, London, E.C., price 1s.

CATALPA SYRINGIFOLIA; *Baldwin*. By seed sown in a cold frame in the autumn, or out-of-doors in April; and by cuttings of the ripe wood, inserted to the depth of 9 inches in sandy soil, as soon as the leaf falls.

CHRYSANTHEMUM; *Old Subscriber*. The larva is that of a fly, generally called the leaf-miner.

CUCUMBERS; *Allan*. The roots are badly affected with eel-worms, introduced with the loam. Turn out and get fresh soil.

DAHLIA OFFSETS; E. S. The plants should be kept to one or two main stems, all minor growths being removed. This operation may likewise be performed on the dry tuber after it has sprouted, or the growing tuber before it is planted out.

GLOXINIAS; T. W. W. See answer to "E. W. B." on "Begonia rust."

GRAPE GROS COLMAR; F. E. S. The cracking is due either to an excess of water in the border, or to the presence of too much humidity in the air of the vinery, or in other words to little ventilation. The Vines absorb water, but cannot part with it.

LANDSCAPE GARDENERS; *Coventry*. You will find their names and addresses in the *Horticultural Directory* for the current year, which is published at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C.

LAPAGERIAS; *A Faithful Reader*. An ordinary greenhouse, or even on a wall out-of-doors in the warmer parts of the country. The plant likes a cool, moist air, good drainage at the root, never to be dried off, and much moisture at the root in the season of growth.

MELON-LEAVES DISFIGURED; J. S. We find no fungus, but plenty of punctures caused by some species of insect. These punctures when very numerous coalesce, and give a form of "rust." Probably timely vaporisation or fumigation would save the plants from injury.

NAMES OF PLANTS; *Correspondents not answered in this issue are requested to be so good as to consult the following number*.—*D. B., Leyland*, 1, Phellodendron amurensis; 2, Castanea sativa var. heterophylla dissecta; 3, Robinia sp. (probably form of R. pseud-acacia); 4, Philadelphus microphyllus; 5, Ceanothus Gloire de Versailles; 6, Kochia paniculata; 7, Akkia quinata.—*Rev. E. D. Lear*, 1, Senecio Fuchsii; 2, Euphadium sulfifolium; 3, Adenostylis alpina; 4, Sideritis montana; 5, Melittis bifolium.—*J. P., Campanula isophylla*.—*W. W., Dorking*. The white flower is Lysimachia clethroides; the other *Veratrum nigrum*.—*P. A., Bermuda*, scy. 1, Lastrea rigida; 2, Colutea arborescens (Bladder Senna); 3, Cotoneaster alpinus; 4, Hypericum Androsaceum.—*E. G. & Son*, Stanhopea tigrina, a fine variety of it; the Fern is Davallia hirta cristata.—*J. H. L.* Cypripedium Lawrenceanum.—*D. R.* Salix herbacea (Dwarf Willow), the smallest of British shrubs.—*R. B.* 1, Thunia alba.—*F. E. A.* 2, Lastrea decurrens; 3, L. rigida; 4, Asplenium, but which species it is impossible to say from the immature barren frond sent; 5, Platyloha rotundifolia; 6, Nephrodium molle.—*W. S., Thrapstone*, Next week.—*Crimm*. Crinum Powellii and Sanvitalia procumbens.—*A. E.* 1, Centaurea musicata, Sweet Sultan; 2, Aconitum napellus, poisonous; 3, Funkia ovata; 4, Aster; 5, Chelone barbata.—*East Devon*. 1, Michauxia campanulata; 2, Lysimachia, near vulgaris;

3, Scabiosa; 4, Platycodon grandiflorum.—*W. E.* Lysimachia thysiflora.—*W. R. F.* Saponaria officinalis, double fl.; Lord Anson's Pea, Lathyrus magellanicus.—*H. H.* 1, hybrid evergreen Oak, probably between Q. cerris and Q. ilex; 2, Lycopodium arvensis; 3, possibly Blechnum boreale; 4, Celsia arcturus; 5, Tropaeolum speciosum; 6, Campanula trachelium var. alba. All the specimens, except the Oak, shrivelled beyond certain recognition.—*A. C.* Convolvulus arvensis.—*R. E. B.* Looks like a white variety of Lord Anson's Pea, Lathyrus magellanicus.—*A. S. K.* 1, Sedum Ewersii; 2, S. spurium; 3, Epilobium parviflorum; 4, Galega officinalis. Your postal order has been sent to the Orphan fund. Many thanks. If everyone did the same, the orphans would be well off.—*W. P.* 1, Galium verum; 2, Lunula dysenterica; 3, Eupatorium cannabinum; 4, Ononis arvensis.

ON-HEATED BOILER; *H. N. B.* There are several such on the market which are efficient and quite safe if placed outside the greenhouse in an enclosed stockhole, and the products of combustion not allowed to enter the house. Please see our advertisement columns, as we cannot recommend dealers.

PLANTS FOR NAME; T. W. *Browning*. If the flower the receipt of which by us was acknowledged in the issue for July 6 was of a blue colour, and it was attached to the peduncle on one side only, it is Phacelia tanacetifolia.

REFERENCES; *G. A. B.* The gentleman ought to return them to you, but there is no law to compel him so to do. If you are unable to obtain possession of them, you will be obliged to trouble your last employer for a testimonial. Employers are often unjust to their servants in withholding references entrusted to them in good faith, as without these they may be unable to obtain another situation.

TOMATO; W. T. C. We find no fungus, but only imperfect ripening, from what cause we cannot say. It is very common.

WALNUT-LEAVES WITH GALLS; F. E. S. Caused by a mite—Phytoptus sps.

COMMUNICATIONS RECEIVED.—*A. H. S.—W. E. G.*, Melbourne; *W. J. B.—C. H. P.—H. W.—H. R.—A. H.—A. B. R.—L. S.—C.* and *P. P. McMahon*, Brisbane, with thanks; *Dr. Helge Adolfsen*, with thanks; *D. P. B.*, Montreal, with thanks; *W. H. T.—F. J. K.—W. J. G.—L.* Bochner & Co., with photographs, Japan; *W. R. P.—B. J. H.—M. J. O.—H. W. E. B.*, Grenada; *E. C. Max*, E. J. W. Mill—Constantine; *W. Allison*, H. W. B. H.—Barrington Weir—*D. R.—C. A. W.* Washington—*C. T. D.—J. P.* Sydney, N.S.W.—*H. R. Hooley*, Bross—*J. W. M.—P. M. Thomson—E. J. Chapman*.—*E. W. & Son*.

GARDENING APPOINTMENTS.

MR. LEONARD TRINER, late Gardener at Lillingstone House, Buckingham, as Gardener to J. CAREY-SAUNDERS, Esq., Milton Heath, Dorking.

JAMES METCALLE, until recently Head Gardener at Dintreath Castle, Blandford, N.B., as Head Gardener to the Marquis of BEAUFORT, Beaufort House, Kells, Co. Meath, Ireland, and entered upon his duties July 25.

MR. FRANK STEWART, for the past three and a half years Head Gardener to Mrs. DOWDALL CARR, Dean Wood, Newbury, Berks, as Head Gardener to Earl CAMBOR, Golden Grove, Carmarthenshire.

MR. ARTHUR C. SMITH, for nearly six years Head Gardener at Edehull, Langar, Yorkshire, as Head Gardener to BEAUFORT V. METCALLE, Esq., M.P., Ford Manor, Lingfield, Surrey, entering on his duties on August 26. MR. SMITH is succeeded at Edehull by Mr. ARTHUR L. STUBBS, for nearly two and a half years his general Foreman.

MR. M. KING, for the past thirteen years Head Gardener at Evelyn Hall, Brackley, as Head Gardener, to H. TUBB, Esq., Chesterton Lodge, Bicester, Oxon.

CATALOGUES RECEIVED.

CARNATIONS AND PICOTEES.

HAYWARD MATIAS, Thames Ditton, Surrey.

BULBS, ETC.

DAVID W. THOMSON, 21, Frederick Street, Edinburgh.

Wm. CRITCHIE & Son, Highgate Nurseries, London, and Barnet, Berks.

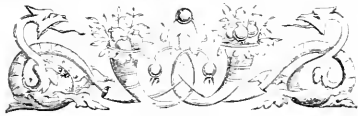
T. MERRIVALE & Sons, 15, Princes Street, and Leith Walk, Edinburgh.

SEEDS.

ROVELLO FRERES, Pallanza, Italy.



GROUP OF *DIANTHUS BARBATUS* VAR. *MRS. BROGMAN WHITE*, FROM R. BROGMAN WHITE, ESQ.
(D. & C. 1899)



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Table listing various articles and their page numbers, including sections on Acropolis, Asters, Books, and various horticultural topics.

ILLUSTRATIONS.

Table listing illustrations and their page numbers, including Acropolis, Cephalopoda, and various botanical specimens.

ALTERNATION IN THE VARIETAL CHARACTERS OF THE TOMATO.

IN 1898 I grew upon my house-plot in Washington a dozen reputed Aene Tomato plants, obtained from a local dealer, which matured and fruited well, and seemed to possess all the published characteristics of that variety. That is, the plants were large and diffuse; haulms somewhat numerous, long, and slender; foliage of a rather light green, the petiole and mid-rib long, leaflets petiolulate, somewhat distant, and only moderately rugose; fruit of medium size, depressed-globular, smooth, evenly ripened, changing from a light to a deep red, of fleshy consistence, and well-flavoured; a tinge of yellow on partially-ripened parts, but soon obscured by the dominant red. I saved seeds from fruit of several of these plants for future propagation, because I knew of no probable source of cross-pollination from other plants.

In 1899 I grew thirty plants from those seeds in my garden plot, and without exception they possessed identical characteristics,

but all differed materially in both habit and fruit from the parent plants; they were strong, sturdy, close-set plants; haulms comparatively few, short, and strong; leaves of a darker green than were those of the parent plants, and the petiole and midrib shorter; leaflets sessile, or nearly so, not distant, and strongly rugose; fruit, in size and shape, and consistence, similar to that of the parent plants, but more delicate in colour and flavour; no yellow tint appeared, and the change from the chlorophyll-green to the deep red or crimson of the ripe fruit was through a neutral or light flesh colour. In short, these plants supplied a strongly-marked variety, as different from the parent plants as any of the varieties of Tomato are from one another. This seemed to have been a case of the production of a new variety, but as I saved no seed, I supposed it was lost. In 1900 and 1901, however, I unexpectedly but exactly duplicated my experience of 1898 and 1899, although my second experience was with Aene plants, obtained from an entirely new source.

In March, 1900, I bought of the Robert Buist Company of seed-growers a packet of their "Selected Aene Tomato" seed, gathered in 1890, from which I grew thirty plants, saving a part of the contents of the packet until the next year. As in the former case, I know of no probable source of cross-pollination of these plants; all had the characteristics popularly attributed to the Aene variety, and were the same as those described in the first paragraph of this article. I therefore assume that my unauthenticated plants grown in 1898, and those grown in 1900 from the Buist seed, were genuine Aene Tomatoes. I saved seed from fruit of several different plants of this Aene crop of 1900, believing it to have received cross-fertilisation and carefully guarded it against admixture with other seed.

In the spring of 1901, I planted the seed of my previous year's crop of Aene Tomatoes, and separately, the remainder of the seed from the original Buist packet. The latter seed germinated well, although they were then about twenty months old, and produced Aene plants, as seed from the same packet had done the year before. The seed from my crop of Aene Tomatoes of 1900, however, produced an entirely different variety, all the plants having identical characters. Strange to say also, that variety is identical, both as to plant-habit and fruit, with the one which I produced from Aene seed in 1899. The Buist Aene plants and those of the new variety are now growing and fruiting in my garden-plot, exhibiting conspicuously their respective peculiarities.

The literature of the production of new varieties of cultivated plants, at least so far as the history of individual cases is concerned, seems to be meagre. I assume, however, that every new variety is produced empirically, if not accidentally, and by seed variation. I have heretofore also assumed that every variety originated in a single plant or a single bud; but in the cases recorded in the preceding paragraphs, all the plants of the crop possessed identical varietal characters, all different from those of the parent plants. I therefore designate these cases as alternations merely to distinguish them from ordinary variation of individual plants. I am well aware of the

remarkable character of the facts I have here recorded, but as I believe that every variety of every species of cultivated plants, and every breed of every species of domestic animals, exists potentially in the aggregate of their respective species, I think I am justified in assuming that any lost variety or breed may be reproduced under the same conditions which originally produced it. Charles A. White, Smithsonian Institution, Washington, July 15, 1901.

A MIDLAND GARDEN.

(continued from p. 85.)

GARDENING is an art full of complex details, and can not be satisfactorily taught by books alone. Experience and practice are necessary to every gardener. Even old experts are continually confronted with cases in which experience fails, and the right course must be guessed at. I am often surprised when I turn to a book on gardening for advice on some special point, to find that just that point is omitted. I turn to another and am still disappointed, to a third and find nearly the same words as before, for there is much copying. The small books have not room for details, and even the large ones cannot include everything. So small a matter as the age at which Leeks should be transplanted involved a wasted hour a short time ago. The book said "when old enough," but when is that? So at last I guessed at it, and now I have learnt by experience that I was too soon; the untransplanted ones are doing best. So again with Beet. The books say "thin and transplant when they have made six leaves," but omit to say whether the two cotyledons are to be counted. I planted out (two rows of the thinnings in warm dry weather, and although I watered them thoroughly, the hot sun shrivelled them up completely, so that I gave them up for lost. Two days later there was a good soaking rain, and two days after that the plants had lifted up every withered leaf, and were as perky as ever. It was the most wonderful resurrection I have ever seen.

There is some curious and unexplained difference in the vitality of plants. Some species if once allowed to flag from want of water will never recover, while others will stand drying up repeatedly, and some such as algae and mosses will recover after weeks of apparent death from drought. Does the difference lie in the nature of the protoplasm, or of the cell-walls, or of the root-hairs by which moisture is absorbed from the earth? The vitality of seeds also differs greatly. The seeds of some species will germinate even after thirty years if kept dry, although this is at present held to be about the maximum limit, while others must be sown within twelve months or they will inevitably die. The story of Wheat from an Egyptian mummy having been made to germinate is very improbable, and has never been actually proved. While seeds are still attached to the living plant a constant change of molecular structure is going on from nutrition and development. When the seed is ripe and becomes detached nutrition ceases, but it is evident that some molecular changes continue to take place. Even ripe seeds often have to be kept some time before they are ready to germinate, and if suitable conditions are not provided at that time degeneration will set in till a critical point is reached, when the seed perishes and germination becomes impossible.

Why is it that the watering of plants never seems to do them so much good as the natural rain? Probably there are several reasons. Rain-water is generally warmer than that

from springs or wells. It is better aerated, and contains more nitrogen. It falls on the leaf-surfaces, which are active absorbents of moisture, whereas artificial watering is often given only to the roots. It contains also a trace of alcohol dissolved from the air in its fall; and this substance, which is an active stimulant to animal tissues, no doubt has a value when applied in very small proportions to plants—for the vitality of plants is of the same nature as that of animals. The two divisions of the organic kingdom had probably a common origin, and although animals have developed along a higher plane, and reached a higher nervous structure, involving powers of mind denied to plants, yet there are many indications that plants possess a mental instinct not inferior to that displayed by animals of low organisation. The wonderful way in which roots will seek their food, climbers their supports, and flowers the best position for light and shelter, can only be explained as phenomena of instinct.

I have recently paid a visit to the gardens at Wanlip Hall, in this county, under the guidance of Mr. Parker, the head gardener, a very able young man. I was struck by the beauty of the pleasure-grounds, and the general superiority of the trees and shrubs and vegetables over those in my own little place.

Wanlip Hall has been in the family of the present owner, Sir Archdale Palmer, Bart., for 150 years, and many of its trees are magnificent specimens, a group of five limes and a remarkable Beech-tree being as fine as anything I have ever seen. Catalpas, Magnolias, and *Choisya ternata* were growing luxuriantly, and apparently without winter protection. The large and varied collection of hardy shrubs was particularly interesting. In one of the greenhouses there was an extraordinary crop of egg-shaped Tomatoes, and in another a grand assortment of Begonias, *F. T. Mott*, *F.R.G.S.*, *Birstal Hill*, *Leicester*.

THE ROSARY.

ROSES AT NEWTOWNARDS AND ELSEWHERE.

To-day I remind myself of the fact that my acquaintanceship with the National Rose Society has this year come of age, and that out of twenty-one metropolitan shows of the National Rose Society, it has been my privilege to attend all, with the exception of that of 1891. I have been comparing notes and impressions between the Temple Show of the National Rose Society just past, the first great Rose show of the century, with the first show of the National Rose Society I saw twenty-one years ago at South Kensington. Truly, the comparison is a favourable one! No longer have we to be content with simple long lines of green boxes, for to-day the eye is relieved by the garden Roses so delightfully shown; while, last but not least, who can forget that vision of beauty and elegant simplicity, Mrs. O. G. Orpen's table of white, silver, and gold, adorned alone with the beautiful single Rose *macrantha*—perhaps, if I may venture to say so, the most beautiful exhibit at this great and memorable gathering. Well might one and all admit that the new departure of the National Rose Society was a wise one; the objectless was a complete success, the weather glorious, and those who worked so long and earnestly deserve the thanks they earned.

The Roses I have seen throughout the Kingdom, both in the gardens and on the bench at Dublin, Hanley, the Temple, Gloucester,

Belensburgh, and Belfast, where my holidays and judging Roses for this year ends, were on the whole exceedingly good; but I was forcibly struck with the number of old varieties, so highly prized by all of us for exhibition and garden alike, that had disappeared from the scene, almost in every case to be replaced by the Hybrid Teas, of which *La France* was perhaps the first, although for so many years considered to be a Hybrid Perpetual.

During the last five or six years, everyone interested in Roses has noticed that as one of the older kinds falls out of either the garden or the catalogue, it is replaced by a Hybrid Tea, or, a Rose of that new race. That this beautiful and distinct race will furnish the Roses of the future was in the first place very definitely fixed in my mind from the fact that in every winning box of Roses coming before my notice for the last five or six years, I have found from six to eighteen of these Roses, blooms of the greatest beauty and refinement; while in the gardens that I have been able to see it was the same story—they were planted everywhere!

Being at Belfast, I took the opportunity to see Messrs. Dickson's nursery. I went with great expectations, quite prepared to find seedlings of much merit, most of them perhaps, if Teas, white or yellow; or if hybrid Teas, pink, white, or the lighter shades of rose. I, however, very soon found that I had made my reckoning without my host, for, contrary to the usual result of expecting much and receiving little, I was permitted to see and enjoy a treat I shall long remember, more especially, perhaps, the seedlings of 1898, 1899 and 1900, many of these flowering for the first time, that will be of great value either as exhibition, garden, button-hole, or climbing Roses, and of every conceivable colour—pure white to silvery-coral, peach to deep rose, scarlet to the velvety-red, darker even than *Horace Vernet*; rich yellow, toning down to chrome and old gold, while in almost every instance each and every shoot produced from one to half a dozen flower-buds.

A remarkable feature about all these Roses is their wonderful vigour without any degree of coarseness in growth, and their tendency to flower continuously; and it may be well to add that there are under trial to-day more than 3,000 distinct hybrid seedlings, and that each one before being sent out, or even placed before the world for its admiration or criticism, is subjected to a most exhaustive trial. Thus we learn for ourselves what an enormous task is year after year being done at Newtownards. My rosarian friends often wanted a good Rose like *Bessie Brown*, *Mrs. Edward Mawley*, *Killarney*, and *Margaret Dickson*, to lighten up their stands in days gone by when too great a number of sombre, dull, red Roses predominated in their stands. They can rest their souls in peace to-day, for as the Scottish lassie at Lucknow heard "that the Campbells were coming," they may with certainty know that in due course they will be able to obtain glorious crimson of varied type, class, and form, that will raise the standard and quality of the flowers staged.

As one who spent when a boy his first ten shillings on half-a-dozen dwarf Roses (it took a guinea in those days to buy a dozen dwarfs), and who also remembers the advent and history of John Hopper, the first Rose the writer ever possessed, I should like to pay a tribute of acknowledgment to these gentlemen who have done so much in raising and placing before the world some of the finest Roses ever raised. *W. J. Grant*.

ORCHID NOTES AND GLEANINGS.

ANGULOIA DUBIA.

FLOWERS of this rare and pretty *Anguloia* have been sent by Joseph Broome, Esq., Sunny Hill, Llandudno, and also a flower of the bright yellow *A. Clowesii* for comparison. *A. dubia* was described as n.sp., n.hyb. ? by Prof. Reichenbach in the *Gardeners' Chronicle*, June 10, 1882, who remarks: "At first sight the flower reminds one of a lemon-coloured *Anguloia uniflora*, covered on the inside of the sepals and petals with numerous minute purple spots." Prof. Reichenbach suggests that it might be a natural hybrid of *A. uniflora* and *A. Clowesii*, and examination seems to indicate its intermediate character between the species named. The flowers, like those of *A. uniflora*, are more compressed than *A. Clowesii*, and the spotting inside the pale yellow flower is very suggestive of *A. uniflora*. *Anguloias* are much liked at Sunny Hill, and as with most of the Orchids, Mr. A. C. Axtell, the gardener, there grows them up to their best. With the *Anguloias* is a spray of a very pretty form of *Oncidium luridum*, a flower of a very dark coloured *O. crispum grandiflorum*, and *Cattleya Leopoldi*. Apropos of the occasional flowering of natural hybrid *Anguloias* in gardens, it may be remarked that some time ago Mr. Broome-flowered *Anguloia intermedia*, a suggested cross between *A. Ruckeri* and *A. Clowesii*, the record having been proved by the cross having been raised in gardens. At the meeting of the Orchid Committee at Chiswick, July 16, E. Roberts, Esq., of Eltham (gr., Mr. Carr), also showed a fine plant of *A. Ruckeri*, which by the more globular form of its yellow flowers, uniformly spotted with reddish-brown, seemed like *A. intermedia*.

ODONTOGLOSSUM LUTEO-PURPUREUM.

Some excellent examples of this showy *Odontoglossum* are forwarded by Mr. A. C. Axtell, gr. to Joseph Broome, Esq., Sunny Hill, Llandudno. All the flowers are large and brightly coloured, the brown marking on the bright yellow ground colour varying considerably; in one instance the greater part of the sepals and petals is of a dark chocolate-brown, and the petals of a whitish ground colour at the base. The variety *platyglossum* has broad segments, blotched with a lighter tint of brown than the other flowers, and the spotting at the bases of the petals changes to a red colour. The primrose-yellow fringed lip of this variety has one large, and several smaller light brown blotches. Flowers of good varieties of *Odontoglossum crispum*, *O. gloriosum*, and *O. cristatum*, were also sent.

ZYGOPETALUM XANTHINUM MAJUS.

A very large and finely-coloured variety of the species generally known in gardens as *Promenaea citrina*, is now in flower at Mr. H. A. Tracy's nursery, Amynd Park Road, Twickenham. The flower, which seems abnormally large for such small pseudo-bulbs to produce, measures over 2½ inches across; the petals and the labellum being 1½ inch in length, and ¾ inch in width. The flower is of a bright chrome-yellow tint, and has purple spots on the base and side lobes of the lip. The plant passes into the collection of Mrs. Ida Brandt, Riosbach, Zurich, noted for its many fine specimens of the extensive genus *Zygopetalum*.

LISSOBILIUS KREBSII VAR. PERUVIATA.

Flowers of this showy *Natal* and Eastern African plant have been received from H. Rider Haggard, Esq., Ditchingham, Norfolk, who has so interestingly and graphically set forth in his books the features of the country which the plant inhabits. The plant is *Phaius*-like in

habit, and has an erect inflorescence of many showy flowers about 1 in. across. The sepals have a greenish ground colour mottled with purple; the broadly-ovate petals which constitute the showy part of the flower are creamy-white on the face, and butternut-yellow on the exterior surface, an arrangement of colour which gives the flower a very striking and novel appearance; the lip is tinged with purple on the side lobes and base of the front lobe, the blade of which is yellow, the margins reflexed. It grows well as a terrestrial Orchid in a cool-house.

CYPRIPEDIUM FANSONI.

This beautiful hybrid, which was named in honour of Mr. Fanson, the indefatigable chief of the Orchid department of Messrs. Hugh Low & Co., is one of the finest of *C. Rothschildianum* crosses, the other parent being *C. × Morganii* (superbicus Stone), and in it the finest characters of *C. Stonei* appear with happy effect. The plant secured a First-class Certificate at the Royal Horticultural Society when it was first shown by Messrs. Hugh Low & Co., June 28, 1898; and a splendid flower now sent by Capt. G. W. Laws-Schofield, New-Hall-Hey, Rawtenstall, Manchester (gr., Mr. Shill), shows its beauties still more intensified. The large white upper and lower sepals are evenly striped with purple. The downward-curved petals are 5 inches long, and, in at the widest, ivory white, handsomely blotched with claret-purple. The large labellum is whitish with rose-coloured face, and the lemon-yellow crest covered with rose-coloured down shows a curious combination of the features of the species used in its production.

between the parents in colouring, and are almost copper-yellow, although they vary a little in different positions. *M. Burneti*, which was raised by Dr. Burnet, of Aberdeen, is considerably harder than *M. cupressus*, and will be found to thrive in districts where the Chilean *Mimulus* does not. *S. Arnott, Caresthorpe-by-Dunfriess.*

FLORISTS' FLOWERS.

PANSIES.

It was interesting to see the old-fashioned English show Pansies staged in such good character by Messrs. Dobbie & Co., of Rothesay, at a recent meeting of the Royal Horticultural Society. It was a reminder of the time—now forty years ago—when this type of Pansy was the only one grown; before the fine Belgian varieties had come to us from M. Mieliez, of Lille, and the Viola had attracted attention. At that time, the show Pansy was one of the leading florists' flowers at the Royal Nurseries, Slough; hundreds of seedlings were annually raised, and though the quality was high, the existing standard, as shown by the varieties then in cultivation for exhibition purposes, was high also, and but very few were selected for naming. At that time the best of the seedlings, when they had an expanded bloom upon them, were carefully lifted from the bed with some soil about the roots, each plant carefully wrapped in a fold of paper with damp moss, and named, securely packed so that the blooms should not be injured, and sent up to the Central Avenue in Covent Garden Market, where they were exposed for sale.

The visitor to Covent Garden Market in the present day can scarcely find an English Pansy in it; the large and striking fancy varieties having taken their place. The first attempts at developing the striped and blotched fancy Pansies were made by Mr. John Sutter when an amateur at Shepherd's Bush. Going over to France in the early forties to establish himself in business at Versailles, he took with him the best of the fancy flowers he had obtained, and while there, led them on to higher development; and it is natural to suppose some of them found their way into the hands of M. Mieliez at Lille, who in his turn raised them to higher levels, and sent them to Messrs. E. G. Henderson & Son, of the Wellington Road Nurseries, St. John's Wood, who had them grown in Yorkshire by the late Mr. William Dean, and he at once set about raising seedlings and distributing them, and by these means the race became widely known and extensively cultivated. In April and May these showy Pansies can be seen in our markets, and on the stalls and barrows of the costermongers in the streets.

The refined English show Pansies will always have a fascination for the florists. So long as the fancy varieties have large, stout, well-marked flowers, it is enough. The old-fashioned show Pansies have to conform to certain standards, written and traditional, and their advance is very slow. Their refinement will always charm. In growth the plants, though mainly vigorous in habit where properly cultivated, are more compact, tufted, and spreading, as a rule quite as free of bloom. Last autumn I divided and replanted some named show and fancy varieties; they stood the winter remarkably well, but the show varieties were decidedly the earliest to flower in the spring. Both have stood the drought exceedingly well, but having been planted early in deeply dug ground, they no doubt rooted deeply, hence their ability to stand the hot, drying weather.

The show Pansies are divided into selfs, yellow grounds, and white grounds. The self flowers are further divided into dark, white, primrose, and yellow selfs; in the centre of each is a bold, dense, well defined blotch; and this blotch should not appear to radiate into lines on its outer edge. Three very good dark selfs were in Messrs. Dobbie's collection, viz., Dr. Inch, J. T. Howard, and Allan Stewart, and while quite distinct one from the other, they were all shades of dark mulberry, depending to maroon, stout, and well formed. The cream or white selfs were represented by two varieties, Annie Blair and Bobby Harper. James Bell is a yellow self, large, and of good properties; Annie D. Lister is an attractive primrose self.

The showy yellow grounds, the yellow contrasting so finely with the dark marginal tints, were represented by Bushy Yellows, deep yellow; John Kirkwood, new of 1901, a very fine variety; and Robert M. Wenley.

A selection of a dozen of the finest fancy Pansies will be found in the following:—William Maxwell, large, blue blotches, edged on the petals with white and rose; and W. P. A. Smyth, bluish-purple blotches, edged pale yellow and rose, both new of 1901; Agnes Mabel, purple blotches, with a combination of white, purple, and rose, a very fine variety; Colonel M. R. G. Buchanan, one of the finest fancy Pansies ever raised, having a very striking combination of colours; David Gold McKay, plum-crimson and white, a fine exhibition flower; David Russell, a large yellow self, with solid black blotches; James Campbell, dense violet blotches, margined with clear sulphur; Lady Sybil, an immense cream self, with glossy mauve blotches; John Menzies, dark blotches, purple and white; Miss Noil, a large and striking flower, marked with crimson, purple, and white; Mrs. Wm. Steel, bluish-purple, cream, and light purple, extra fine; and Tom Walters, a combination of purple, red, rich yellow, and light maroon, extra fine.

Additions of new varieties are annually made to the fancy section, but the actual advance seems to be more lateral than forward. Here in the south we have few opportunities of comparing the new with the old. In Covent Garden market in early spring it is possible to see trays of plants of very fine varieties, which are seen to the best advantage, because bloomed mainly under glass. They are propagated by means of cuttings and root division. They are purchased and planted, but many die, not because they lack constitutional vigour, but because they are imperfectly planted and left to fate. If the ball of roots be gently opened out, planted in moist, well-prepared soil, with some grit about the roots to encourage action, lightly sprinkled overhead for a few days, and shaded from the sun, there is no reason why they should not do well and become objects of beauty in the garden. *R. D.*

CONTINENTAL NOVELTIES.

A NOVELTY IN GRAPES.

According to *Le Jardin*, Mr. J. Riffault, of Chalons-sur-Marne, has succeeded in raising a new variety from that much-valued Grape, Gros Coulard, syc. Chasselas Gros Coulard, which is greatly superior to the seed-parent. This novelty, after several years' trials, has shown great hardiness as against frost, and great fruitfulness. The berries are of a very large size, of a golden-yellow tint, and possess a delicious flavour. The fruit ripens earlier than Chasselas de Fontainebleau, and can be preserved till June. This new Grape will be introduced to commerce either this autumn or the next by the firm of Gilbert & Prendeur, of Chalons-sur-Marne.

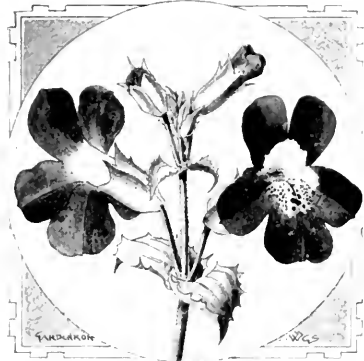


FIG. 33. MIMULUS BURNETII (LITTLE'S) FERTENSIS.

MIMULUS BURNETI ×.

This desirable hybrid *Mimulus* (fig. 33) I owe to the kindness of Mr. Robert Lindsay, of Kaines Lodge, in whose garden I saw it in bloom last year. It is a hybrid between the well-known *M. luteus*, a doubtful native plant or an escape from cultivation, and the Chilean *M. cupressus*, which has been widely cultivated. When grown in a dryish border of sandy peat, where the plant figured was cultivated, it develops a good deal of the habit of *M. luteus*, and is more erect-growing than its other parent, although not so tall as the first, as will be seen from the figure. A plant in a boggy piece of soil, close to a tank for Nymphsias, is of more tufted growth, and in Mr. Lindsay's rock-garden it was scarcely so tall as the specimen shown. The flowers are intermediate

ARCTOTIS STECHADIFOLIA.

This species, also known as *A. grandis*, was shown recently by Mr. A. W. Wade, of the Riverside Nursery, Colechester, and we have also received specimens from Mr. Gumbleton. It is a dwarf, shrubby Composite, with angular, hollow stems, covered, like the leaves, with grey down. The leaves are nearly sessile, oblanceolate, remotely toothed, and gradually tapering to the base. The flower-heads are surrounded by an involucre of several rows of scales, the inner ones twice the length of the outer ones, and somewhat membranous; the ray-florets are whitish, shaded with blue. The plant is very attractive (fig. 31), and deserved the Award of Merit it obtained; but it was introduced as long ago as 1799, and suffered, we presume, to go out of cultivation, as it is not included in Nicholson's Dictionary.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 88—91.)

The following extracts from remarks kindly sent us by our correspondents who contributed to the Table of Reports published in the last issue of the *Gardeners' Chronicle* are interesting, as they explain in some cases why the crops in particular districts have been good or bad. Observations upon experiences with varieties of fruits under stated conditions are always valuable. It should be remembered that the following notes were written during the third and last weeks in July, and since then the severe drought, of which almost all our correspondents complain, has been succeeded in many districts by copious supplies of rain. We therefore refrain from repeating many notes relative to the great need of rain then experienced, the circumstances being no longer the same.

0. SCOTLAND, X.

MORAY OR ELGINSHIRE.—The fruit crops, with the exception of Apples, are as good as possible. Apples gave every promise of an abundant crop, until the gales in June destroyed the flowers as the fruits were beginning to set. *Thos. Macdonald, Balfour Castle Gardens, Kirkwall.*

SUTHERLANDSHIRE.—Apples are a poor crop, except on young trees. Pears, Plums, and early Strawberries have also light crops, but Elton Pine, our best late Strawberry, particularly in light soil, had an excellent crop. *D. McVellie, Dunrobin Castle Gardens, Sutherland.*

1. SCOTLAND, E.

ABERDEENSHIRE.—Whilst some Apple-trees on walls have a large crop of fruit, standards in general have little. Pears are only grown on walls here, and they have a poor crop, but the fruits will be of good quality. Plums are good; but Cherries are a thin crop, and the fruit is inferior. Strawberries and small fruits, with the exception of Black Currants, are plentiful. *John Forrest, Haddo House Gardens, Aberdeen.*

—The fruit crops in this district are somewhat variable. We had a good show of blossom, but a great deal of it failed to set. Apples, Pears, and Plums are much under the average. *John Brown, Delgaty Castle Gardens.*

BAFFINSHIRE.—The fruit prospects were very promising; buds and blossoms were plentiful; but there followed a very severe fortnight in the month of March, with bitter cold winds and continuous frost—on several occasions nearly 20°. Pollen was very deficient in blossoms of all kinds, no doubt owing to the buds

having been but imperfectly ripened. I never saw crops here more in need of rain, with the thermometer standing over 80 in the shade daily. *J. Fraser Smith, Cullen Gardens, Cullen.*

BERWICKSHIRE.—The Apple crop is the smallest for some years, owing to dull, cold weather having prevented the blossoms from setting. Lane's Prince Albert and Stirling Castle are exceptions, and bear good crops. Pears look well. *Dominic du Comice* is still our best Pear on the wall. *John Cairns, The Birsal Gardens, Coldstream.*

FIFEHIRE.—Large fruits are very disappointing after such a grand show of blossom. *Wm. Henderson, Balbirnie Gardens, Markinch.*

—The fruit crops in the middle and eastern districts of Fife shire are extremely variable, crops of certain kinds being heavy and light in the same locality. Plums are very thin; while Pears, such as *Bourre d'Amalins* and *Louise Bonne* of Jersey are heavy on bush and thin on wall-trees. Large-fruited Apples, especially *Codlins*, are cropped best, and the only blanks among these are among trees which were not sufficiently thinned last season. Gooseberries and Black Currants are scarce, while the Red and White varieties of Currants are abundant. On the whole, average crops will be the general rule, but owing to the heat experienced lately, the size and quality will be good, should the needed moisture come soon. *W. Williamson, Tarril Gardens, Cupar.*

FORFARSHIRE.—In the gardens here there is a good average crop. Apples had very favourable weather when in bloom, and set well, but many trees, even after thinning, have shed a good quantity of fruit, doubtless owing to the very dry season. Small fruits are plentiful, with the exception of Black Currants. Strawberries have been a very heavy crop, and there was no waste this season from damp or slugs. Of course, Royal Sovereign in the best of seasons has a lot of moulded berries, but there is always plenty left, it bears so well. *W. McDonald, Brechin Castle Gardens.*

—The fruit crop is a very good one, Gooseberries, however, have suffered somewhat from the ravages of caterpillars. Strawberries on light soils are small, owing to continued drought, but as a rule are plentiful and of good quality. Wall-trees and orchard fruits are looking well, and give promise of a good harvest. *Thos. Wilson, Glamis Castle Gardens.*

HADDINGTONSHIRE.—The present is another abundantly fruitful year, only Apricots and Apples being slightly under average, and the quality promises well. The abnormal drought and great heat have considerably damaged the Strawberry and small fruit crops, late Strawberries failing to swell, and the earlier were very quickly over. I have never seen Pears larger and finer. *R. P. Bootherton, Tyninghame Gardens, Preslandick.*

—The fruit crop is not so good as was expected, owing to the very dry weather experienced in this district. In the month of May we had rain on ten days, measuring 2.1-16 inches; for the month of June, rain fell on nine days, with a total of 1.1-13 inches; and during this month (July), up to date, rain has only fallen on two days, the 6th and the 11th, measuring an 18th and a 10th of an inch respectively. Although Strawberries have been good, there was a promise of a splendid crop, had there been more rain. Small fruits are a very good crop. *George Taylor, Breanmouth Park Gardens, Dunbar.*

—I do not remember having seen fruit-trees of all descriptions more profusely flowered; and they were fortunate, except in the case of Apricots, Peaches, and the earliest Pears, to escape the severe frosts at the end of March and early in April; consequently the prospects of a good fruit harvest are very promising. The ravages of insect pests have been severe, especially in gardens where no preventive measures in the way of spraying have been adopted; the hot, dry weather, and absence of even occasional showers, favouring the increase of enemies of plant-life. *Thos. H. Cook, Gosford Gardens, Longquidry.*

KINCARDINESHIRE.—Although most of the fruit-trees showed plenty of blossom they set very badly, owing, I think, to the wood having not been sufficiently well ripened last year. This has also been a bad year for caterpillar, and green and black fly. We had quite a gale, accompanied by intense cold, about the beginning of June, which swept much of the newly-set fruit off the trees. *John M. Brown, The Gardens, Blackhall Castle, Banochry.*

MIDLOTHIAN.—Orchard trees in this district had an unusual wealth of blossom, but the weather at the time was sunless, north-east winds prevailing, with a continuation of very low night temperatures, the result being that the set of fruit was disappointing. Varieties of Apples that bore well last year have no fruits this season—*Blenheim Orange* for instance. Varieties poor last year are good this, such as *Warner's King*. Pears are a good crop; Victoria Plums are heavy; Apricots medium; small fruits of all kinds are a very heavy crop; Strawberries were extra fine in crop and quality. *James Whylock, Dalkeith Gardens, Midlothian.*

PERTHSHIRE.—Plums are a remarkably heavy crop, especially the following varieties: Victoria, Kirk's, Jefferson, and Pond's Seedling. These had all to be heavily thinned. Cherries are also abundant, and of grand quality, the most prolific being *May Duke*, *Elton*, *Governor Wood*, *Late Duke*, *Welder's Early Black*, *White Heart*, and *Morshos*. *M. McIntyre, The Glen Gardens, Innerleithen.*

6. SCOTLAND, W.

AVESHIRE.—The fruit crops here are decidedly the best that have been for the last ten or more years. *D. Buchanan, Burgangy Gardens, Dalry.*

—Apples, Pears, and Plums, owing to good weather in the month of May, have very fine crops, and I never saw the foliage and fruit in such a clean state. Bush-fruit is also very good, and the foliage healthy. *David Murray, Culzean Gardens, Muighole.*

DUMFRIESHIRE.—Strawberries were a heavy crop. *Royal Sovereign*, *Monarch*, *Fillbasket*, *Trafalgar*, *Waterloo*, and *Latest-of-All* have done well, and kept up a succession in the order given. Apples look well, and are an average crop. *John Urquhart, Haddon Castle Gardens, Ecclecleuchan.*

—With regard to Apples and Pears, in the south-west of Scotland it is a very noticeable fact that many varieties bear naturally heavy crops every alternate year; and as far as the amount of crop is concerned, this is the year of small things. There are a few varieties of Apples that disregard this rule, and on kinds such as *Dutch Collin*, *Keswick Collin*, *Ecklinville*, *Lord Salfield*, *Warner's King*, *Hawthornden*, *Northern Greening*, *Duchess of Oldenburgh*, *Cellini*, &c., the trees in most cases are very healthy, and the quality of the fruit promises to be very good. Stone fruits

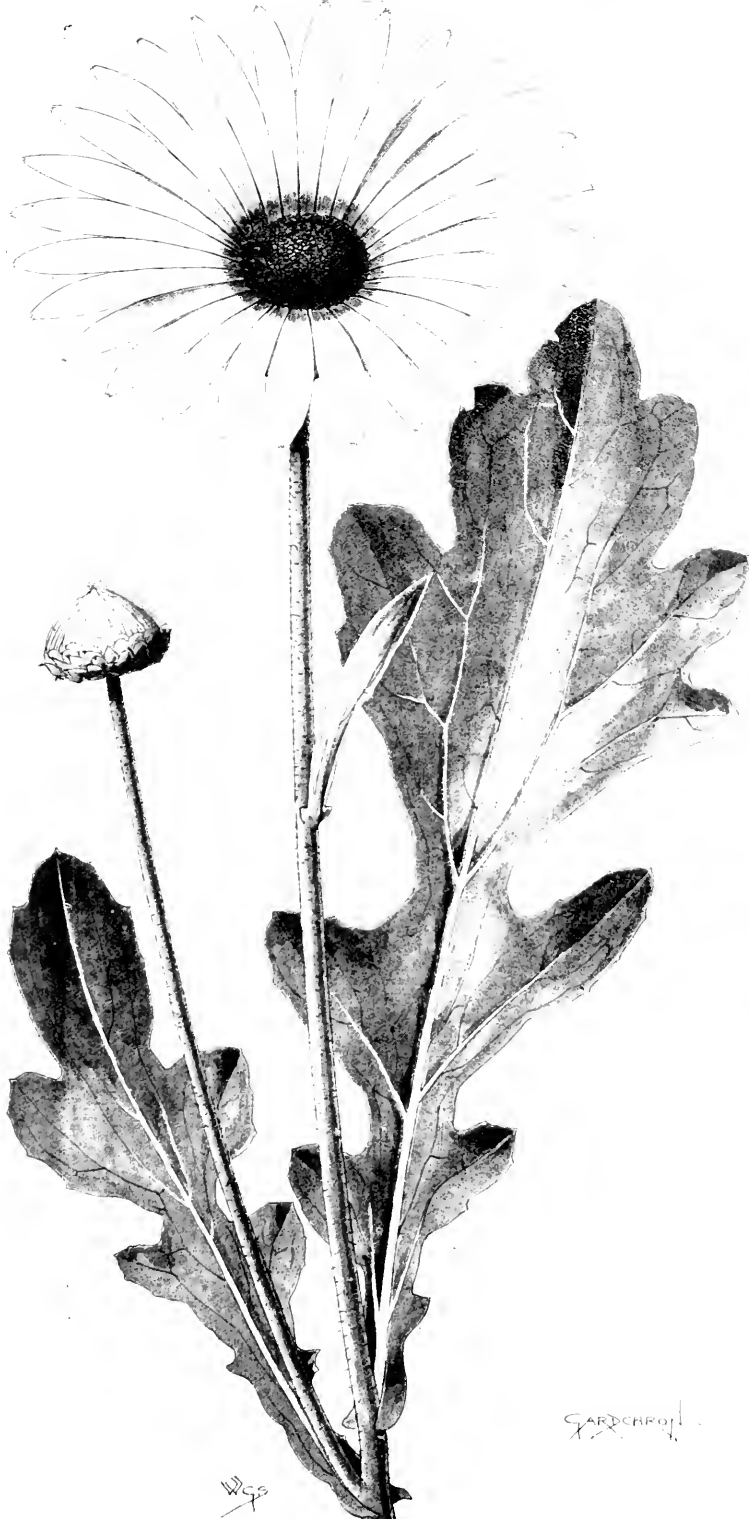


FIG. 31. ARCTOTIS STUECHADIIFOLIA (GRANDIS).

From a specimen shown at Chiswick, by Mr. A. W. Wads, July 16, 1861. (See p. 152)

such as Plums, Cherries, Peaches, Nectarines, and Apricots, are bearing a very good average crop. Small bush fruits are giving a very satisfactory return this year, and the weather being dry and warm, they are being gathered in excellent condition. Strawberries were a first-class crop. Rarely do we have weather that allows us to secure this crop in such fine condition as we have done this year. *John Mackinnon, Terregles, Dumfries.*

WILTSHIRE.—Apples are slightly below the average, but promise well for size and quality. Pears and Plums are heavy crops; small fruits abundant, and owing to the dry weather have ripened well. Strawberries have suffered somewhat from want of moisture, and later crops from this cause have not fulfilled earlier expectations. Figs are a heavy crop, and well advanced. Peaches and Nectarines thin, but healthy. *James Day, Galloway House Gardens.*

2. ENGLAND, N.E.

DURHAM.—Apples suffered attacks from fly and caterpillar during the time they were in blossom, and many fruits subsequently fell from the trees. *R. Draper, Seaham Hall Gardens, Seaham Harbour.*

NORTH MERLAND.—The Strawberry crops in this northern district have been enormous, and the quality was excellent. Owing to the immense crop of Apples there was last year, the crop is generally small this year. Plums and small fruits are very abundant. *James Noble, Woodburn Gardens, Darlington.*

YORKSHIRE.—Apples suffered from caterpillars and fly during and after the flowering season. Pears were spoiled by the caterpillars attacking the inside of the fruits. Gooseberries and Currant-trees bear heavy crops, and are free from the leaf-eating caterpillar. *Jno. McClelland, Ribston Hall Gardens, Wetherby.*

In this district the Apple crop is very much under average, and the trees are looking badly, having suffered much from American-blight and caterpillar. In some places there are plenty of Plums, in others none. Pear-trees bear a good crop, and the trees look well. Cherries are good and clean; bush fruits abundant and good. Strawberries have been a splendid crop here; they are strawed early, and when in flower were afforded a good watering. A fresh plantation is made every year, and this gives the finest fruits. Varieties grown are Black Prince, Royal Sovereign, Noble, President, Sir J. Paxton, Gunton Park, which is excellent now (July 19), and for preserving the old Grove End Scarlet is still the best. One of the most satisfactory fruits grown here this dry season is the Logan Berry, it is a very valuable addition to our hardy fruits, with a distinct flavour of Blackberry, Raspberry, and a dash of something you have not tasted before. When the fruits are thoroughly ripe and black, they make a fine dish for dessert, always rather sour, but very agreeable. They are excellent when cooked in any way, whether cold or hot, so long as the flavour is not spoiled by too much sugar. It was planted here two seasons ago between a row of Apple trees in one of the fruit quarters, about two yards apart. The growth last season was very strong, and they have borne abundance of fine fruit, the slight shade of the Apple trees seems to have been favourable to them those two dry seasons. They are as strong as the strongest Brambles. The fruit is much appreciated here, and will have to be grown extensively in the future; it is a handsome fruit when well grown, and black, about twice the size of the ordinary Raspberry. In

gathering, the fruit does not part from the stalk like the Raspberry. *Baileys Woods, Udsall Gardens, York.*

— Never had a more abundant crop of Strawberries, nor finer fruits of Royal Sovereign, Héricart du Thury, and Elton Pine—the latter just coming in (July 20); others over. *J. Simpson, Stamford, Sheffield.*

— Owing to the drought, Raspberries and Strawberries have severely suffered. Gooseberries have been attacked badly by caterpillars; in many instances not a leaf is left. Other fruits look remarkably well. *John Suell, The Gardens, Farley Hall, Otley.*

— Apple-trees carried so heavy a crop last year it has left them less productive for the present season; some trees showed very little blossom, and the cold east winds prevailing at the time the fruits were setting, caused most of them to drop off. Pears set a good crop, but much damage has been done them by caterpillars, which have eaten the heart of the fruits away. *John Alsop, Bolton Holme Gardens, Beverley.*

— The fruit crops in this neighbourhood are disappointing; most trees blossomed well, but there is not much fruit. Apples make a poor show, many fine-bearing varieties, such as New Hawthorned, Lane's Prince Albert, and Lord Grosvenor, not having a fruit on them. Pears are a fair average, some kinds bearing well. Plums are very irregular, but generally under the average. Strawberries dried up instead of ripening. Small fruits are abundant and good. Insect pests are very prevalent. *J. S. V. Cox, Wigginton Gardens, York.*

(To be continued.)

FOREIGN CORRESPONDENCE.

ITALIAN METHOD OF COOKING THE FRUITS OF LAGENARIA.

We have read your note on "Botanical Vegetables," published in the *Gardeners' Chronicle* on July 6, concerning *Lagenaria leucantha longissima*, but we think the way of preparing this dish as indicated is not much used in Southern Italy, where the fruit is mostly prepared as follows:—Cut them into pieces about 3 inches long, take out the seeds, and fill with a stuffing of mince-hashed meat, &c., then boil or bake, and serve with a Tomato sauce. This is really not a bad dish. The flowers of several kinds of Gourds also are made use of. They are dipped into a paste made of flour and eggs, and then fried in oil or fat, furnishing also a dainty dish. *Dennmann.*

JAPANESE VEGETABLE PRODUCTS, SOY BEANS, AND RUSH MATTING.

As an instance of the amount a bye-product may be made to realise, a statement made by the British Consul at Biogo and Osaka may be of interest. It is a fact well known that Soy, which is so much used in this country as the base of many of our well-known table sauces, is obtained by boiling the beans of *Glycine hispida* with an equal quantity of ground Barley or Wheat, and leaving it covered twenty-four hours to ferment, after which salt is added and more water, the whole is stirred at least once daily for a period of about two months, when the liquid is poured off, filtered, and kept in wooden vessels, becoming brighter, clearer, and of better quality by keeping. It is exported from China and Japan in considerable quantities. From the small beans also a large quantity of oil is expressed, which is of a sweet and pleasant taste. It is used for burning, and generally for edible purposes. For the preparation of Soy, over 2750,000 worth of beans were imported into Biogo and

Osaka during the year 1899. Four-fifths of this supply were derived from China, the remaining fifth from Corea. The residue after the expression of the oil is made into large round cakes, similar in shape and nearly as large as a grindstone, weighing about 60 lbs. These are used chiefly for manuring the wet Rice-fields, but an increasingly large quantity is used for food for cattle. The value of the bean-cake or oil-cake, as it is otherwise called, imported into Biogo in 1899 was close upon 2350,000, being a good half of the total intake for the whole empire. The value of these two forms of bean-produce was thus over 21,100,000.

The well known Rush-matting, which form such an excellent floor covering, especially in summer, and is made from the culms of *Cyperus tetragonis*, is said to have shown a slight falling off during the year under review, but the exports were still well over half a million rolls, of the value of 2375,000. The price is gradually rising, owing to the increasing scarcity of the Rush. The higher grades of this handsome floor covering have nearly disappeared, owing to the operation of the United States tariff, which imposes a very heavy duty on grades costing more than 16s. per roll. Hence, more than 70 per cent. of the total quantity manufactured is of the inferior grade, costing just under that margin.

In the same report from which the foregoing information is obtained, a curious light is thrown on the manufacture of those rugs and carpets which have appeared in our shops under the name of Sakai rugs; these are said to be made of cotton, hemp, and wool, and the bulk of the cheaper sorts were formerly made mostly from old gunny-bags obtained from India; but in consequence of the prevalence of the plague at Bombay a year ago, the shipment of these bags was stopped, and the manufacturers are now "falling back on the canvas wrappers of American bales of cotton." As this kind of goods were getting into disrepute in America, a guild was formed to frame precautions against this inferior work being produced in future. London, it is said, now takes more than three-fourths of the output; the profits, however, are so exceedingly small at Sakai, that the production of the rugs is declining. *John R. Jackson, Kew.*

MARKET GARDENING.

FIELD TOMATOS.

So far as I am able to form an opinion, the crop of field Tomatos is most satisfactory in every respect, the plants being sturdy, clean, and furnished with large clusters of fruits, many of which consist of twelve fruits each. I am referring to plants which have been properly attended to in the way of stringing them up to the wires and removing of all lateral growths at the right time; the plants being stopped at the third or fourth cluster. Owing to the beneficial effect of the recent and much-needed rains, the fruits are swelling up and ripening well. In order to help in this direction, all side growths should be kept pinched, and the large, compound leaves should be cut back to within two or three leaflets, so as to let plenty of light and sunshine reach the fruits.

In marketing the fruit, the latter should be picked under-ripe, graded, and packed in pecks lined with three half-sheets of blue tissue-paper, the ends being turned down over the fruit, and secured in position with two or three cross-ties of raffia. The quality of the fruit being indicated on the address-label attached to each peck as first, second, or

third, as the case may be. Each peck will hold 12 lb. of fruit when filled up to the rim, the peck measure itself weighing 2 lb. However, each peck should be placed on the scale to see that the weight is right before tying down the paper in readiness for despatching to market, the pecks being packed one above the other in the cart as well as in the railway-vans in perfect safety as regards the fruit contained therein. *H. W. Ward, Essex, August 5, 1901.*

TREES AND SHRUBS.

COTONEASTER HORIZONTALIS.

This distinct-looking shrub is a conspicuous object at the front of the conservatory at Gumbesbury House. It has a flat and fan-shaped habit of growth, which justifies its specific name, the branches with their many shoots spreading horizontally. The shrub has a pleasing aspect when the fresh green foliage appears in the spring, when the numerous blossoms appear; and finally when the fruits colour, and assume their rich autumn tints. The plant thus possesses decorative value for nine months in the year. *R. D.*

SPECIES OF CRATEGUS.

In the last number of the *Revue Horticole*, M. Henry gives full descriptions of three species, viz., *Crataegus Korolkowi*, *C. pinnatifida*, and *C. pentagyna*; *C. Korolkowi* has pinnately-lobed leaves and yellowish fruit, of the size of small Peas, which ripen early; *C. pinnatifida* has the leaves less divided, and the scarlet fruits are sometimes turbinate, sometimes globular (see *Gardeners' Chronicle*, 1896, p. 620). *C. pentagyna* has less deeply divided leaves, and small subglobose, purplish-brown fruits.

NOTICES OF BOOKS.

THE SOUTH SEA ISLANDS.

A BROCHURE composed of Notes of a Holiday Cruise among the South Sea Islands has reached us from Mr. R. Cheeseman, Brighton Nurseries, Victoria. The publication is the more pleasing by being written primarily for a smaller public than that to whom it is now (by request) addressed; so that while the writer lays no claim to being "thorough and exhaustive," he cannot be charged with "book-making." He says that:—"These beautiful islands (the new Hebrides group) and their fast-decaying races, were very interesting to me. . . . Islands that should be looked upon as every part of our island continent, and should by every means in our power be retained."

Mr. Cheeseman, who travelled in company with Mr. Peter Burr, has an eye for the botany of the country round which he travels. We are told that:—"From Lord Howe Island alone are obtained the famous Kentia Palms, used so extensively throughout the world for decorative purposes. Kentias *Fosteriana* and *Behoreana* grow on the coast, and for some distance up the hills. *K. Canterburyana* grows towards the tops of the mountains, and *K. Moorei* on the extreme tops, which are usually in the clouds. The climate is genial and moist. There is no evidence of an aboriginal population in this island. The present inhabitants—all whites—number 109. They are all engaged in collecting Palms and Palm-seeds for export. The seeds are collected all the year round. About 20 tons were brought to Sydney by the *Menapue* on our return, for re-shipment to Melbourne."

Leaving that neighbourhood the author moves on to find that, on Norfolk Island, "the well-known Norfolk Island Pine grows everywhere, on the tops of the hills, and down to the water's edge. We measured one—22 feet in circumference 6 feet from the ground. It grows to a great height, is pyramidal, and clothed with branches almost to the ground. Fugosia Pattersoni is quite a timber tree here. Both should prove valuable for coast planting."

In and out among the islands went our traveller, making ninety calls in very brief time. "Our first call is at Anclauhat Harbour, Anclium . . . where much of the soil is rich, and the vegetation very rank, and difficult to penetrate. Crotons grow from 15 to 20 feet high. They are very conspicuous objects in the forest. Some are coloured dark crimson, almost black, others scarlet and yellow, and yellow. They are all seedlings, and some reproduce themselves. The majority of the young seedlings seen about were green, many of them with traces of variegation, which will probably intensify as they age. The beautiful Tree Fern, *Alsophila excelsa*, grows abundantly to a height of 60 feet; the stems are thin but strong—they grow very rapidly here."

These extracts suffice to show the style of the pamphlet, and will, we trust, induce British readers also to take an active interest in islands of which it can only be said that they are as valuable as they are beautiful.

FLOWERS AND GARDENS: NOTES ON PLANT BEAUTY. By Forbes Watson. Edited, with a preface, by the Rev. Canon Ellacombe. (John Lane; The Bodley Head, London and New York.)

MR. WATSON'S book was written during his last illness, when, conscious of the approaching end, he completed it with matter nearest to his hand, rather than with amended materials for which he had no time to seek. So says his friend and first editor, J. B. Paton. We have now a re-issue of the book, edited by Canon Ellacombe, and after the thirty years that have elapsed since its first appearance, it is pleasant to see it again.

Mr. Watson was a pioneer, and a bold one. He had no patience with formal bedding (in his day the great feature in gardening), or with the distorted productions of the florist. For him the best flowers were, if not actually those of the hedgerow and copse, at any rate those which were thoroughly at home under captivity, and so seemed in sympathy with their environment. As an advanced thinker on these subjects, and one fighting against the egot Public Opinion, Mr. Watson is certain to positiveness, and assertive to aggressiveness, with no sympathy for half-measures, nor for those who differed from him. The carefully-chosen words of a poet are but food for his scorn when he chooses to disagree with them; and so, indeed, are other authorities.

Flowers and Gardens shows the progress of the last thirty years very clearly. Much of the system inveighed against has faded, forgotten and unnoticed, and a more natural style is preferred, and we may add that the careful grammar and somewhat fantastic imagery of the author reads nowadays like what is known as "fine writing," the flow of adjectives being curiously typical of an elaborate and now somewhat old-fashioned style.

But it is to the intentions we must look, and if Mr. Watson's flights of fancy are not to be followed by us, we can thoroughly appreciate his earnest and then original wish, not merely to encourage natural rather than artificial

effects, and to draw attention to details of beauty individually, and as part of one great scheme, but finally to see, in that oft-quoted "Primrose by a river's brim," food or meditation and original thought and graceful healthy fancies.

HEADINGTON-HILL HALL.

HEADINGTON-HILL Hall, Oxford, the residence of George Herbert Morrell, Esq., M.P., is a mansion in the Italian style, massive and rich in architectural embellishments, erected about 1860. The house occupies a commanding position on the crest of the hill bearing its name, in the midst of gardens, and, surrounded as it is by a series of grandly-formed terraces, walks, and shrubberies, forms a noble adjunct to the old university city, whose ancient and modern buildings lie at its feet, enshrouded with the foliage of the stately Elms, &c., in the several college gardens and groves.

The park and gardens possess many fine timber trees, but are most famous for the extensive and choice collection of Conifers, planted in 1856-57, under the direction of the late Mr. W. H. Baxter, Curator of the Oxford Botanic Garden, who laid out the grounds, and harmoniously disposed some 150 forms, including of *Abies* 12 varieties, *Acers* 6, *Cupressus* 8, *Junipers* 25, *Magnolias* 6, *Piceas* 10, *Pinus* 10, *Thuja*s 5, and *Wellingtonias* 12; these last-named have attained to over 50 feet in height, with a 19 feet spread of the lower branches.

The park is divided by two main roads, but a large portion, with the 4 acres of kitchen-garden, are connected by an open-work ornamental girder bridge, resting on colossal rugged masonry, spanning the coach road to London; the south park being in a measure entirely detached.

There are two lodge entrances, furnished with noble wrought-iron gates in flagstone work; and from the lower or Oxford lodge, a boldly sweeping carriage-drive leads up to the house to the well-dressed grounds. A pleasing expanse of lawn, well broken but not crowded with groups of shrubs, ascends gently to the terraces on the south and west fronts, the ground from thence rising abruptly.

The grand entrance to the house has a somewhat plain appearance, every view being shut out by a steep laurel-hedged bank 200 yards long and 25 feet deep, the broad walk above it, some 19 feet wide, forming a delightfully cool promenade beneath the shade of stately Elms and Yews, and which forms a protection to the terraces on the north and east. The terraces are well formed, the slope being rendered exceedingly easy for bedding purposes. On the widest terrace is a fountain formed of four nymphs' heads supporting a shell, down which the crystal fluid descends in copious streams to a massive circular basin.

One great advantage the display has is its position, and the splendid background of the noble Elms which overshade the wide, deep, sloping "Laurel bank" that stretches the whole width of the lawns and house, forms a charming perspective. All around are to be seen towering *Sequoia gigantea*, Cedars, standard *Robinias*, Irish Yews, and close-trimmed standard Hollies. These give the place a unique appearance, inasmuch as there is no other such residence or garden situate on a sloping hill-side overlooking the University city with its groups of towers and spires. Surveying the scene from the upper terrace, and descending the broad flight of stone steps which divides the Laurel bank into equal portions, we encounter half a dozen specimens of

the Chili Pine (*Araucaria imbricata*), whose rigid or horizontal, large, flat, sharp-pointed, glossy green leaves give the trees a most majestic appearance, and one very fine specimen stands on the terrace near the mansion. On this plat there are two long, angular beds filled with the golden tri-color zonal *Pelargonium Mrs. Pollock*; two other beds are occupied with white *Marguerite* Daisies mixed with the dwarf fragrant *Heliotropium peruvianum*, some tree-like examples of the same being set as dot-plants. A central circular bed has a specimen *Dracena australis*, surrounded by a massing of the brilliant scarlet *Begonia Vesuvius*, the edging of this bed being a dense margin of white and green variegated *Eunymus*.

The fountain terrace is a stage lower, and here are twenty-two beds to pattern, set out between and around a dozen standard *Robinia* incensis, whose umbrella-shaped heads afford but little shade to the dwarfier subjects enclosing their stems. The two centre circular beds are edged with the trailing yellow-flowered *Stoncrop*, *Sedum* acre, encompassing a massing of *Violas* in variety. The other beds consist partly of flowering and partly of carpet plants in considerable variety.

North-west of the mansion, between some *Sequoia gigantea* and the half-dozen closely-trained standard Hollies, runs a long semi-circular bed of dwarf Rose trees; and disposed on the lawn are beds of *Petunias*, double white Stocks, French Marigolds, and dwarf bronzy-leaved zonal *Pelargoniums*, &c., the beds of *Asters* being margined by a double line of ruby-coloured *Sedum*. A fine clump of *Pampas*-grass and a pyramidal dome of silver variegated *Eunymus* are objects of interest on the lawn.

Time would fail to recount the beauties of the many forms of trees and shrubs. Suffice it to say that the Indian Cedars (*Droodera*) which skirt the upper carriage-drive are equal to any in the county, and those who are inclined and have the time will be much interested in inspecting the gardens at Headington-Hill Hall, &c.

VEGETABLES.

EARLY PEAS.

Of its earliest Pea this year was Chelsea Gem, which we gathered outside on May 25 from a sowing made on February 4 in small boxes. These bore good crops, and were fully three weeks before those of the same variety that were sown outside. 4 Sow Peas in long shallow boxes 6 feet by 2½ and 3½ inches, one side of which is fastened by a staple and a plug of wood, and the plants are very easily transplanted by simply removing the fastening after a small trench has been prepared. A spade is passed along the other side, and the whole mass slides out into the trench without any damage whatever. English Wonder makes a good succession to the above, and neither require Pea-sticks.

Carlton's Early Morn is still the best Pea for early work amongst the Marrow section, being fourteen days in advance of any other variety of the same type. The haulm grows 3 feet high, so that the crop can be grown on a border without interfering with the fruit-trees on the wall.

Springtide is another very early good Pea, and a prolific cropper; the haulm is about 2 feet 6 inches in height. Carlton's Daisy is another fine, second early, and is one that will stand gentle forcing as well as any Pea I know of; bears fine pods filled with large, good flavoured Peas. Veitch's Anne is another

modern Pea of the first quality, a prolific cropper, and the pods are well filled with Peas.

Water should be afforded Peas in all cases before the plants appear to want it, for should they show signs that something is wanted, they are probably checked at that stage so much that the production of Peas will cease. The various sowings should be examined carefully at short intervals of time. A heavy syringing with clear soft-water occasionally in the evening works wonders with the Pea; should mildew be found, syringe the haulm with flowers-of-sulphur. Sulphur mixes very well with milk, and also clings to the leaves, and is much better than water for mixing into a paste. Care should be taken that the under part of the foliage is thoroughly wetted. W. J. Cook.

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener, to R. L. MEASURES, Esq., Cambridge Lodge, Flodden Road, Cambridge.

Cattleya superba is another autumn-flowering species possessing high-coloured, attractive flowers. Some cultivators find this plant difficult to manage, but I am of the opinion that its cultivation is not nearly so difficult as that of many *Cattleyas* of the labiate section. It does best when grown in baskets in the usual sort of compost of peat and sphagnum-moss, not in the ordinary *Cattleya*-house, but hung near the glass in a bright part of the East India-house or the plant-stove. The species requires abundance of water at the present season, that is, while in active growth; but after flowering and growth are ended, only sufficient root-moisture is required as will retain the pseudo-bulbs in a plump condition.

Dendrobiums.—Early-flowering *Dendrobiums* that have completed their growth, should be removed from their present conditions to others which, although favourable to the ripening of the pseudo-bulbs, will not tend to induce secondary growth from the base. It is necessary that this subjection to altered conditions should be effected in a manner that no harm from check will result to the plants. Place them first in an intermediate temperature, and gradually prepare them until it is quite safe to put them into a house where they may rest. If there is no structure set apart for this purpose, ainery where the foliage is falling, or has already fallen from the Vines, will answer well. The species which will need attention at the present season, are *D. aureum*, and the early-required plants of *D. nobile*. Among the hybrids *D. s. Ainsworthii*, *D. s. enosium*, *D. s. Cassiope*, *D. s. endocharis*, are earliest with us, but as the season generally is late, do not remove these until they are quite ready, or the pseudo-bulbs may shrivel. When the plants are placed in the resting-house, only sufficient water should be afforded to retain the newly-made growth in a plump condition.

Laelia anceps, &c.—Both sections of this species will now be rapidly pushing up their flower-spikes, and will need every encouragement to induce them to properly develop and mature their pseudo-bulbs. Afford the plants all the light possible by removing any shade that has been employed. During the middle of bright days throw open the ventilators. Syringe the plants freely overhead the first thing in the morning in bright weather, and again an hour or so before opening the ventilators. Close the house in good time in the afternoon and again syringe overhead, and an amount of sunlight will be husbanded that will dry up the moisture before evening, and less fire-heat will be necessary. *Laelia autumnalis*, *L. Gouldiana*, and other species and hybrids belonging to the Mexican section, should be placed in the same conditions.

The Cool House.—*Mastdevallias* that may require repotting shortly will include *M. Barryana*, *M. Veitchii*, *M. ignea*, *M. Davisii*,

and the hybrids that have been derived from this section. These should now be carefully inspected, and be sponged if necessary. The small scale which infest the undersides of the leaves is very troublesome, but it may be easily removed by careful washing with a soft sponge. If cleaning is delayed until after the plants have been repotted, it will be difficult to work among the leaves without loosening the plants in the potting compost, which will be harmful. One of the most interesting plants among the many species of *Pleurothallis* is *P. punctulata*. It is one of the rarest and finest; its glaucous foliage is most striking, and should not be sponged. The plant is now growing actively, and should be placed in a light position at the warm end of the house. It succeeds most satisfactorily suspended near the roof-glass in the *Mastdevallia*-house, and requires a liberal supply of root moisture at all seasons of the year.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to SIR CHAS. TENNANT, The Glen, Eimerlicthen, Peeblesshire.

Cherry House.—The trees are now rich in wood and plump in bud. The leaves, too, will not be capable of much further effort in elaborating the sap and storing it in the buds and wood, and as at this juncture any undue excitement will cause the trees to start into growth, the trees should be exposed to the air as much as possible. The border should not be allowed to become dry, and if the trees are weak, liquid-manure may be afforded. In order to keep red-spider in check, wash the trees occasionally with the garden-engine or syringe, and wherever the roof-lights are portable, by all means remove them, so that the rain and dew may cleanse the foliage and invigorate the trees. Black aphides are troublesome on *Cherry*-trees, but the leaves and wood, with their hard texture, are not inviting to them; and whenever they appear syringe the trees with an insecticide, or dust the affected parts with tobacco-powder. *Cherry*-trees in pots are very interesting, and they are easily grown. They offer such a large variety, and afford fruits over so long a period of time, that it is a wonder they are not more often cultivated. With very slight forcing they ripen their fruits in the month of May, and afford a succession of fruits till the outdoor *Cherries* are ready for use, giving a succession of fruit for dessert from May till September. Early Rivers, Empress Eugénie, May Duke, Archduke, Royal Duke, Governor Wood, and Late Duke are admirable for pot-culture.

Vines for Early Forcing.—A period of rest is absolutely necessary for permanent Vines about to be hard forced, but though it is most desirable that the wood should ripen early and the foliage drop naturally, these processes must not be unduly hastened. The house or houses ought to be set wide open, and a current of dry air maintained, if need be, with the aid of a little fire-heat in dull, damp weather. As soon as it is seen that the Vines have finished their growth, shorten all laterals to about half their length, and remove sub-laterals, shortening long young canes as necessary. On no account should the foliage left on the Vines be syringed daily. Well coating the leaves with flowers-of-sulphur is the best remedy for red-spider, and may be applied in the case of all Vines from which the fruit has been cut. As a rule, the best results attend the practice of confining the roots of extra hard-forced Vines in narrow inside borders, and the smaller and better filled with roots these are, the oftener should some portion be renewed. In the case of partially-exhausted borders, these may well be freshened up from the surface, the first proceeding being to fork away the old soil well down to the roots. Then give a good soaking of water, or, better still, liquid-manure, prior to affording a liberal top-dressing with a rich compost consisting of turfy loam, bone-meal, mortar-rubbish, and charred garden refuse. This being done while yet the foliage is green, many fresh roots will find their way into the

new soil, and still more, late next season. When, however, the borders are much exhausted, a surface-dressing is not sufficient, and it is better to remove about 3 feet or 4 feet from the front, or say one-half of a narrow border, and to replace with a loamy compost, or a mixture somewhat richer than that of which the borders were originally composed.

Mid-season Houses.—There is more shanking and want of colour in Grapes than usual, possibly the result of last year's cold, wet weather and want of sun. The Grapes have been slow in acquiring bloom and colour, but the berries are as large as usual, and pronounced excellent in quality. Red-spider has been rather troublesome. I find thinly coating the pipes, whilst hot, with a wash of sulphur and skim-milk the most efficacious remedy. Copious supplies of water through a good surface mulching, and occasional supplies of liquid-manure of a sustaining rather than a stimulating kind, are most contributory to a satisfactory result. Fire-heat has been necessary in order to safely afford ventilation by night; the heat, however, should be moderate.

Late-houses.—Continue to afford supplies of water through a good surface mulching, and until the Grapes are well advanced in colour, for most late Grapes take a long time to perfect thoroughly, and some, particularly Mrs. Pince (which has often a large percentage of stemless berries), even after appearing finished, are not coloured up to the shank, which may be due to stopping supplies of food too early. The Grapes may shrink from the same cause. All late Grapes require a long time to perfect, and the further advanced they are at this date the better. Afford a temperature of 70° to 75° by day artificially, and 80° to 85° with sun, closing sufficiently early to increase it to 90°. When the sun is beginning to wane, afford enough top and bottom ventilation to ensure a circulation of air, and allow the temperature to gradually cool. The pipes should, if necessary, have a little heat in them to prevent the temperature falling below 65° at night.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Summer Pruning of Apples and Pears.—Bush and pyramidal-trained trees may now be safely summer-pruned, and probably but little lateral growth will be the result. It is wise to allow the length of shortened growths to carry at least four or five leaves, and should any secondary growth take place it would occur in the upper two buds, which will be removed at the winter pruning. The thinning of the growths will allow sun and air to reach all parts of the tree. Where Apples are desired for exhibition purposes, the trees should be looked through, and promising fruits relieved of any foliage that may be shading them, with a view to obtaining the best colour. The fruits may also be supported so that the eye of the Apple stands out prominently to the sunlight, otherwise if left in a drooping position the stem side of the fruit only will be coloured. With these bush and pyramid trees the leading shoots should be shortened only to about two-thirds of their length. Bush Plums may be treated similarly, and any suckers springing from the base must be cut clean away.

Strawberry Plants for Early Fruiting.—The runners layered a few weeks since may be removed from the old plants for a few days, and they will then be in a suitable condition for planting on borders. The best way to obtain early fruit is to plant strong runners in August on a warm border which has been well manured and deeply dug for a previous crop, and which requires now only to be slightly forked over and a little short Mushroom-bed manure worked in. These early-planted Strawberry-plants will ripen their fruits ten days earlier than older plants. They should not be allowed to stand after the first crop has been gathered, and may therefore be planted 1 foot apart each way, planting quincunx fashion.

Before planting, level the ground and tread it, to make a thoroughly firm rooting medium. Water the young plants before planting, and afterwards. Do not bury the crowns when planting, but make the soil firm about the roots. Place a slight muck of short manure round each plant. When layered in pots, little check is experienced when planted out, but water should be applied freely in times of drought.

THE FLOWER GARDEN.

By T. H. STADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Mixed Borders.—Frequent attention should be given, in order to maintain an attractive appearance, removing spent flowers and flower-stems, particularly of such plants that form seed freely. Oriental Poppies, *Pyrethrum roseum* in variety, and other plants which die down partially after flowering, should have attention at that stage. The early-flowering annuals should be removed, and their places filled up with late summer-flowering plants from the reserve garden. Stir the surface frequently, and rake off weeds. Place stakes to the taller Michaelmas Daisies and other tall-flowering plants.

Trees and Shrubs.—Any of these spring-planted, and not as yet re-established, should still be supported with stakes and guying-wires; and an examination of the fastenings should be made, in the event of more space being required in those, and all supports should be firmly fixed in the soil. Do not forget to place a soft pad between the stake and the bark, so as to prevent abrasion of the latter.

Summer Bedding.—Make observations on the present season's bedding, and note any new combination of colour that has pleased, and the adaptability of fresh plants which may have been used. It is always interesting to try a few new plants, or rather fresh subjects every season; and although they may not always prove a success, one gains a better knowledge of what will, and what will not, thrive and give pleasure. While Devonshire and the west generally are more favourable for the growth of half hardy species of plants than some other counties, success largely depends on the aspect, altitude, and soil. Of new plants tried for bedding at Poltimore this summer, mention may be made of *Acalypha musaica*, and *Draena Sanderei*; the first-named plant answers very well as a "dot" plant for placing over dwarf-growing species forming a carpet, and of a colour in contrast to it; its reddish-bronze leaves are very effective. The plants do not make much growth, but retain their foliage well, and they should be of good size when planted out. *Draena Sanderei* has not been so successful, but this may be due to the plants not having been freely exposed to the sun before they were planted, for the sun has caused some of the older leaves to turn yellow, although the growth made outside retains its natural variegation. *Pelargonium Raspaal Improved* is effective planted sparingly over a carpet of *Antennaria*, with *Nicotiana sylvestris*, *Anthemiums*, and *Grevilleas*, interspersed among them, the bed being edged with yellow *Tropaeolum Mrs. Clibran*. Of *Ageratums*, a new variety, *Princess Victoria Louise*, is a pleasing addition. The plants grow with us about 6 inches high. The flowers are white, while the thickly placed stamens are light blue in colour, forming a pretty contrast quite distinct from other varieties; and its effect is pretty with tall plants of *Lyx-leaf Pelargonium Mme. Crousse*, variegated *Phlox*, *Anthemiums*, and *Alternanthera major aurea*. As a ground-work in medium sized beds, *Amblyon vexillarium* is useful and pretty, requiring very little attention in pegging down.

Propagation of the more tender plants, such as *Alternantheras*, *Coleus*, *Mesembryanthemums*, and *Impatiens*, must now be commenced. Take a few cuttings at a time, so as not to disfigure the beds. *Alternantheras* make roots best in pans about 2 inches in depth, and being put in chiefly to furnish stock, do not

require so much soil, which should be of a sandy nature. After inserting the cuttings, place them in a close frame facing south. Artificial heat is not necessary. The cuttings should be watered once, and then sprinkled daily overhead according to the weather; and during bright sunshine, shade may be necessary part of the day. A little air should be admitted early in the day to prevent excess of moisture.

Zonal Pelargoniums.—Take cuttings of these, and insert them in boxes or 4-inch pots. The plants will keep better in pots during the winter. When the cuttings have been inserted, place the boxes or pots on a hard base in an open sunny position.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PARK, Esp., Prestwold Hall, Loughborough.

Draena rubra, *D. congesta*, and *D. gracilis* raised from points or roots, if advanced in growth sufficiently to require larger pots, say 18's, should be shifted forthwith. With a little assistance from manurial waterings, useful decorative plants can be grown in this convenient-sized pot. Place the freshly-potted plants in a close intermediate temperature till re-established, and afterwards afford them air to dry during the warmer part of the day, closing the house about 1 P.M., after damping down; and later in the day damp the paths, &c., again.

Ficus elastica and *F. radicans variegata*.—Useful plants for decorative purposes, if they were raised from "eyes," will now be growing freely, and may be shifted into 18's, and placed in a light house or pit; and as soon as the plants have attained the height of 15 to 18 inches, afford them cooler treatment, so as to restrain the growth.

Chrysanthemums. Owing, probably, to the excessive heat, I find Japanese varieties are very precocious in bud formation. The buds formed in July being too early, should be removed, and the growths at the base of the bud reduced to one shoot, selecting the strongest and best placed. This will necessarily add another foot to the height of the plants, and the second crown-bud will be selected for flowering. Pinch out all lateral growths below the break, and afford the plants a weak stimulant occasionally. Look out for black aphid, and dust the leaves with tobacco-powder in the early morning, when the foliage is damp with dew. To trap earwigs, place bean-stalks amongst the growing plants, look them over every morning, and blow the earwigs into a can of hot-water. Make all the growths secure to a centre stick, and tie all the stakes to a wire to prevent the plants being blown over by winds.

Freesia refracta alb.—Shake out old bulbs which have been exposed to the effects of the sun, and select the largest and best only for repotting. Unless the bulbs are well developed and fully ripened, they will not succeed. The stock should be supplemented by fresh purchases annually, and now is the time to obtain them. Early potting is essential. Place seven bulbs into each 5-inch pot, using a compost of loam, road-grit, and leaf-mould. After potting the bulbs, place them in a cold frame, and do not give much water until some growth has been made, and the roots are active. Let them grow in frames, or on shelves near to the glass, until the flower-spikes are seen, when they may be afforded a temperature of 50° to 55°.

Retarded Lily of the Valley are now very popular, they may be had in flower so easily from September onwards. As the refrigerators or cold storage-houses are only opened at intervals, orders should be placed in time to secure crowns being despatched either fortnightly or monthly as required. Upon receipt, pot twelve to fourteen crowns into a 6-inch pot, and place them in a light position on a shelf in an intermediate temperature; syringe twice or three times daily, according to the state of the outside atmosphere. In a fortnight or three weeks they should be in bloom.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK BOLLE, Bleton, East Baddlesly, Devonshire.

Winter Spinach.—This important crop should be sown between the 12th and 18th of the present month, and it is well to make two sowings on or about these dates. The crop may follow Peas or Potatoes; and the land should receive a moderate dressing of soot or wood-ashes, and be dug a foot deep a week or so before sowing the seed. Fitting rain, moisten the drills a few hours previously to sowing the seed, as a dry soil is always detrimental to the germination of Spinach seed. Till the plot well and evenly before taking out the drills, which should be drawn 1 inch in depth, and 15 inches apart.

Onions (Tripoli).—For standing through the winter I make two sowings, the first about August 15, and again in the last week of the same month. Let the ground be deeply dug, and manured if necessary, as Onions require a fairly rich soil. Before getting out the drills, which should be 1 inch deep, and 9 inches asunder, make the ground fairly firm by treading or drawing a light roller over it a few times, and rake off all stones, &c.

Chervil.—Where this is required to flavour salads and soups during winter, a small sowing should be made now in shallow drills 8 inches apart, and the young seedlings thinned to 1 inches apart as soon as fit. In ordinary winters, Chervil remains quite fresh with us, and self-sown seedlings appear plentifully. In colder countries it may be necessary to give it a sheltered corner.

Leeks.—Those planted out in trenches early in May should be earthed up as is usual with Celery, but first remove any weeds there may be; and if at all dry, afford a good watering with diluted drainings from the cow or farm-yard. Where the dibber was used in planting, as advocated in my Calendar for April 27, the ground should have the flat hoe plied between the rows; this will act as an earthing-up as well as tend to promote growth.

Cabbage.—Watch for slugs among the first sowing, and dust the plants frequently with lime and soot or wood-ashes. Keep the seedlings constantly moist. The last sowing should be made without delay, also a little of the Red Cabbage for pickling.

Celery requires frequent attention, and it is better to go over the rows about every fortnight, adding a little fresh soil each time, than to earth them up too heavily at any one time. The soil should not be made too firm about the plants until the final banking-up is done. From four to six weeks should be allowed for blanching. The remarks made a month since in respect to the early rows, apply also to later ones, as regards affording water and keeping the surface-soil in a loose condition.

General Remarks.—The recent rains appear to have been general, and with us have greatly improved crops; but fine weather having again set in, do not neglect to afford water to such crops as Peas, Beans, Turnips, Celery, &c., twice or so each week. Keep the flat hoes moving between all crops where they can be conveniently worked. Afford spring-sown Asparagus a light dressing of salt to accelerate growth before running the hoes between the rows. Cabbages planted out here in June are infested with caterpillars; hand-picking is the surest remedy. Dust the plants overhead occasionally with soot and lime when the leaves are moist. Watch Cauliflowers, Savoyes, &c., or caterpillars may soon cause them much injury.

EXCURSION TO GLASGOW.—On August 1 Messrs. WM. FILL & Co., nurserymen and seedsmen, Hexham, treated their *employees* to their annual excursion. The party, numbering nearly sixty persons, travelled to Glasgow, where they visited the exhibition, &c. Much appreciation was expressed of the firm's kindness and generosity.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

Local News.—Correspondents will greatly oblige by sending to the Editor early intimation 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 horticulturalists.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 10	Coniston Horticultural Show
TUESDAY, AUG. 14	Royal Horticultural Society's Committee Meeting.
WEDNESDAY, AUG. 15	Bishop's Stortford Horticultural Society's Show.
THURSDAY, AUG. 15	Swansea Horticultural Society's Show Tantallon Burnie Horticultural Society's Show.

SALES.

FRIDAY, AUG. 15.—Established Orchids at Protheroe & Morris's Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick 62.5.

ACTUAL TEMPERATURES:—

LONDON.—August 7 (6 P.M.): MAX. 79; MIN. 55.

August 8.—FINE, WARM

PROVINCES.—August 7 (6 P.M.): MAX. 72; HOME
Counties; MIN. 53, N.E. Scotland

In connection with the condition of the fruit crops which has recently occupied so much of our space, we venture to call special attention to the following paragraph on the ripening of the fruit, and of the ripening of the wood. The latter phrase is constantly made use of by gardeners, but few of us ever stop to think what it really means. We have extracted the following from a recent number of the *Comptes Rendus*, from a paper by M. F. KOVESSE on the proportion of water in relation to the ripening of woody plants:

"It has been demonstrated that the production of fruit on woody plants is governed by the climatological conditions of two consecutive years. Thus the year following a year of drought yields abundant harvests, and a year following a wet season but a poor crop. Further, the quantity of fruit is in proportion to the ripening of the wood of the branches that produce the flower-buds. One of the causes that play an important part in the ripening of the wood is the quantity of water available for them. This supply of water produces two other very important effects:—1st, It influences the distribution of the fruit branches on the plant; 2nd, It contributes to the building up of the plant. In fact," concludes the author, "the form of a tree, as well as the position of its flowering branches, are, in great part, determined by the circumstances attending the ripening of the wood. Further, the degree of ripening of the branches, and consequently the number of flowers and of fruit borne the following year, is greater when the quantity of water

received by the plant is less. These facts give valuable information with regard to the proper pruning of trees and of the Vine, it being necessary to regulate the quantity of water received by the plant. It is needful to know the quantity and the arrangement of the roots in the different layers of soil in which they exercise their functions, and the properties of these layers as regards the water they contain. In some cases pruning of the roots themselves is possible, and this must be practised with a view to attaining the desired result."

HÆMANTHUS (See Supplement).—Visitors to the last Temple Show will remember the very striking exhibit made by l'Orticole Coloniale, of Brussels. Such a display of species and varieties of this noble genus has never before been got together. A general view of the group is given in our Supplementary Illustration, and for a descriptive and cultural account we may refer our readers to our number for May 25, 1901, p. 332. In the same issue a special illustration was given of *H. mirabilis*, a form with broad perianth segments of a salmon colour.

FLOWERS IN SEASON.—The Carnation appears to be the most popular flower in bloom at the present time, for we have to acknowledge blooms of this delightful border and pot-plant from four of our readers:—

Mr. JOSEPH BROOME, of Sunny Hill, Llandudno, whose choice collection of Orchids has been frequently remarked upon in these columns, sends us flowers of seedling varieties he has raised in the open ground, and which are now blooming for the first time. They are all very beautiful, and include self-coloured and yellow-ground flowers, flakes, bizarres, and fancy varieties, and the general quality is so high, that one almost wonders if it be worth the trouble to have named Carnations if seedlings may be trusted to give such a satisfactory result. If Mr. BROOME selects the best of the varieties he has sent, and cultivates them another year, his collection will be a valuable one.

Messrs. WALSHAW & SON, Scarborough, send blooms of a variety named Madeline Reynolds. They are bright crimson in colour, of fine form, with rounded petals, and very fragrant. Messrs. WALSHAW describe the plants as of good habit, and very free in flowering.

Messrs. LUNG & MATHER, Kelso, Scotland, forward blooms of a new self-coloured Carnation named Sir R. Waldie-Griffith, which we can hardly over-praise. It is a bold flower, with well-rounded petals, very slightly fringed, and good calyx. In colour it is very distinct, and may best be described as rich orange-scarlet, with a slight amber or yellow tint in the older petals. Though not heavily perfumed, it is fragrant, and the variety is an excellent one. The same firm send Keltom Rose, Primrose League, Duchess of Westminster, and other varieties, whose qualities are already known.

A correspondent who modestly wishes to be known as R. B., sends two seedling varieties, one of which is a very pretty yellow self-coloured variety, but not better than some of the same type already in gardens. The other, a purple self, is small, and generally inferior.

THE SEASON OF WASPS.—Have any of the readers of the *Gardeners' Chronicle* experienced unusual trouble from wasps this year? Our correspondent, Mr. CHAS. SIMPSON, Newby Hall Gardens, Ripon, Yorkshire, says that in those gardens, there is quite a wasp plague. They are clearing off all outside fruits, and the

Grapes, Peaches, and Nectarines had to be encased in muslin bags even before the fruits began to colour. Between the dates July 10 and August 1, Mr. SIMPSON has taken as many as 127 nests; yet this has seemed not to lessen the damage the insects are doing. On July 30, thirty-two nests were taken, and on other days, twenty, seventeen, fifteen, twelve, and so on. This is an extraordinary record, we should suppose, and perhaps some of our readers may like to know the means by which the nests were taken. Mr. SIMPSON dissolves cyanide of potassium in water, then, after soaking some cotton-wool in the liquid, pushes the wool into the hole containing the nest. After the wasps have been killed the nests are dug out and destroyed, and if this is not done, some of the grubs are said to hatch and find a way out of the hole.

A COMPETITION FOR YOUNG GARDENERS.—From an advance copy of the schedule of prizes to be offered at the next spring show of the Royal Caledonian Horticultural Society, to be held on May 7 and 8, we observe that prizes are offered to under-gardeners only, for the best plans, drawn to scale (10 feet to inch), for laying out as a garden a piece of ground about 20 acres in extent. A sketch plan is given showing what features, including house, already exist on the site that is to be dealt with. Competitors will have to send with their plan a description of it, and among other things describe how roads would be made, how the planting would be done, the character of the planting, &c. We heartily commend this feature of the schedule as being likely to do those young gardeners who are sufficiently energetic to take part in the competition a great deal of good. The plans have to be in the hands of the secretary, Mr. P. MURRAY Thomson, not later than April 1, 1902.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held on Tuesday, August 13, in the Drill Hall, Buckingham Gate, Westminster. The lecture on this occasion will be on "Tender Plants for Outdoor Gardening," by Mr. WM. TOWNSEND, Messrs. KELWAY & SON will show a large collection of Gladioli.

The syllabus for the examination in horticulture has been revised recently by the Council, on the advice of the examiners. Intending students should send a penny stamp to the Secretary of the Royal Horticultural Society for a copy of it.

Our readers are again reminded that the schedule of prizes to be offered at the Fruit Show to be held at the Crystal Palace on October 10, 11, and 12, may be obtained from the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster, but applicants must enclose a postage-stamp. In addition to the list of prizes, an authoritative list of dessert and cooking Apples, Pears, and Plums, is included.

THE "BOTANICAL MAGAZINE" for the present month contains coloured illustrations and descriptions of the following plants:—

Bulbophyllum grandiflorum, Blume, t. 7787.—a native of New Guinea (see *Gard. Chron.*, 1895, vol. i., p. 122, fig. 129).

Paeonia lutea, Franchet.—A yellow-flowered tree Paeony, native to the mountains of Yunnan; t. 7788. Flowered at Kew.

Helichrysum Guelicini, Engler, t. 7789.—A native of Kilauea, flowered by Mr. GUMBELTON (see *Gard. Chron.*, 1900, vol. ii., p. 333, fig. 103).

Strobilanthes gossypinus, T. Anderson.—A shrub, the herbaceous portions of which are covered with fulvous down; leaves shortly-stalked, elliptic acuminate; flowers arranged

in terminal panicles, lilac, tubular, irregularly five-lobed at the limb. The shrub is a native of the Nighiri Hills, and is said to die after flowering. Kew; t. 7790.

Gladiolus sulphureus, De Graaf, t. 7791.—With this is cited as synonymous *G. Adlami*, Baker, in *Gard. Chron.*, 1889, l., 233, the earlier name having been overlooked even in the *Index Kewensis*. Native of the Transvaal.

GLUT OF PEAS AT EDINBURGH, AND CONSEQUENT POOR PRICES.—The following letter, written on August 3 by one of our Scotch correspondents, shows that growers of Peas in the Edinburgh district have had to accept exceedingly low prices lately, and that this is due to the later sowings having "turned in" sooner than they were expected. The effects would probably have been less disappointing had there been better means existing to distribute the greater supply over a larger area than usual:—"The price obtainable for the best quality of green Peas at present is far from satisfactory. For the last ten days, Duke of Albany Peas have been selling at 3d. per peck in Edinburgh market, and at the auction sales for even less—in some instances at 1d.; so that market gardeners are at their wits' end. Yet many people in town and country are willing to pay a fair and reasonable price, were means taken to distribute the supply. Why should co-operative societies not take advantage of such offers to place home-grown articles before their members? The continuous drought has caused the later sowings to be ready sooner than would have been the case in an ordinary season, so probably in a fortnight or three weeks the large surplus will have disappeared, and prices will go up. People will then ask why green Peas are so dear, when they were selling so lately at 2d. to 3d. per peck. There is great room for some advance price-list to be displayed as the seasons come, intimating to the public that such and such vegetables and fruits are to be had at prices within the reach of all. Foreign fruits are always displayed in prominent positions in every conceivable place, thus showing that shopkeepers have a preference for them."

CANNELL'S CHAMPIONSHIP BELT for the best fruit, flowers, and vegetables, the latter grown from seeds supplied by Messrs. CANNELL & SONS, Swanley, and exhibited by the various gardening societies in Kent, was, we are informed, contested for at a show held at Eynsford on Monday last. All the productions were of great excellence, and although the Eynsford Society was awarded 1st prize, Chislehurst 2nd, and St. Mary Cray and Orpington 3rd, the difference between them was trifling. The judges pronounced the exhibits the best that this popular county prize has ever brought forth.

MORE ROYAL NURSERYMEN.—Messrs. DICKSONS, LTD., the well-known seed merchants and nurserymen, of Chester, who for many years held special warrants of appointment to her late Majesty Queen VICTORIA, and to his Majesty the KING, when Prince of WALES, have now been honoured with a warrant of appointment to his Majesty King EDWARD.

GRAPE DIAMOND JUBILEE.—We are informed by Messrs. D. & W. BUCHANAN, of Forth Vineyards, Kippen, that they hope to show their new black Grape, over which there has been so much controversy, at the Shrewsbury show, to be held on August 21, and at the great fruit exhibition at Glasgow on September 1 and 5. Messrs. BUCHANAN suggest that if some Grape cultivators will also show fruits of the variety Black Morocco at these exhibitions

there will be afforded good opportunities for visitors to compare the one with the others. We may add that Diamond Jubilee is not so good at Kippen this year as last, owing, it is said, to the roots having been excessively pruned.

"ICONES SELECTÆ HORTI THENENSIS."—The fifth and sixth fascicles of this work are before us. As we have before stated, the work is devoted to the description and illustration of the plants growing in the collection of M. VAN DEN BOSCHÉ, of Tirlemont, Belgium. The lithographic illustrations are excellent, and the critical remarks of the editor, M. DE WILDEMAN, are very serviceable to botanists. The plants recently figured are *Cardiospermum grandiflorum* var. *hirsuta*, t. 61; *Berkheya radula* (de Wild.), t. 62; the *Stobea radula* of Larvey; *Eriogonum Jamesii*, var. *flavescens*, t. 63; *Cinnamomum pedunculatum*, t. 64; *Bakea microcarpa*, t. 65; *Hermania candicans*, t. 66; *Rhipsalis rhombica*, t. 67; *Leucopogon lanceolatus*, t. 68; *Amsonia Tabernemontana*, t. 69; *Dioscorea caucasica* (Lipsky), t. 70, a plant of great interest as an outlier of a tropical genus. Another species, if we mistake not, has been found in the Pyrenees.

M. ED. ANDRÉ.—Our excellent colleague has been promoted to the grade of officer of the Mérite Agricole. We applaud with both hands, as our neighbours say.

ECONOMIC PLANTS.—Recently in the Winter Garden of the Jardin des Plantes, Paris, a collection was got together of no fewer than 400 species of plants suitable for cultivation in the colonies for economic purposes.

"VINE CULTURE UNDER GLASS."—By J. R. PEARSON, revised and edited by C. E. PEARSON, Chilwell Nurseries, Loddham, Notts. Seventh edition. (Nottingham: THOS. FORMAN & SONS, Sherwood Street.) As the preface to this edition remarks, "Many works on Vine-culture have been published during the last thirty years." However, there is always room for a good book, and the small volume before us is both practical and up-to-date. There are accounts, with illustrations, of the best sorts of vineries of all sizes, instructions for planting and managing Vines, and a good list of sorts appropriate for various environments. The book is small enough for the pocket, and inexpensive, so can often be carried about for immediate consultation, while larger and more ambitious tomes have to be left upon the library shelves.

A MORE THAN CENTENARIAN.—*American Gardening* records the death of BARNEY MORRIS, who for over thirty years was employed as a gardener in Prospect Park. BARNEY MORRIS was born in Cavan, June 10, 1792.

SYNDICAT CENTRAL DES PRIMEURISTES FRANÇAIS.—This association of French market-gardeners has lately held at Carpentras an "Exposition d'Emballage," at which different methods of packing were exhibited. The packages for market purposes must be strong, light, elegant, and moderate in price. The syndicate complains of the ill-treatment of the consignments made to the railways, and of the delays in forwarding the goods. On reading the document, we thought at first we had to do with the South Eastern or London, Chatham & Dover Railways, but on reading a little further, we found that this is one of the cases in which they do not manage things better in France.

"CYCLOPÆDIA OF AMERICAN HORTICULTURE." We have already alluded to the issue of the earlier volumes of this im-

posing publication by Professor BAILEY, assisted by many experts, and have now to record the issue of the third volume, beginning with the letter X and ending with Q. We have nothing to add to our eulogies of preceding volumes. This one does but emphasise our opinion of their excellence. Some portions are, of course, of local interest only; but, on the whole, the work is one of reference wherever gardens and gardeners are found. One deficiency we note, and that is the absence of adequate references to the monographs of garden genera published in these columns and in the *Journal* of the Royal Horticultural Society by BAKER and others, such as Iris, Lilium, Brodiaea, Passiflora, Nepenthes, Helioscocus, Sedum, and many others. We find only occasional references to the various Conferences which have been held at Chiswick and elsewhere, wherein the species of various genera have been enumerated and collated for garden purposes. The book is published by Messrs. MACMILLAN & CO.

THE CONGO STATE.—MM. DE WILDEMAN and DURAND have published the first fascicle of a systematic enumeration of the plants collected in the Congo State by M. A. DEMEYRE. Beginning with Rannunculaceæ, the present instalment ends with the Leguminosæ.

JOURNAL OF THE FRENCH HORTICULTURAL SOCIETY.—The *Journal de la Société Nationale d'Horticulture de France*, for June includes the Society's Reports, articles on the Cucumbers of Traïon (Austria), by M. TAWONNY; Use of Bougainvillea Sanderiana, by M. LÉON DUVAL; and, Bouillie à la Sonde as a Remedy for Mildew, by M. RENÉ SALOMON. Various notes and briefer papers complete the volume.

OSBERTON.—The Right Hon. F. J. S. FOY-JAMIE kindly threw open his gardens to the public recently, at a charge of one shilling a head, for the benefit of the Gardeners' Royal Benevolent Institution. Amusements and means of refreshment were provided. The arrangements were carried out by Mr. ALLSOPP, the head gardener. The plant-houses, fruit-houses, herbaceous borders, Rose-gardens, flower-beds, carpet-beds, the lake, the Rhododendrons, the wild garden, the rockeries, the sweet-garden, filled with fragrant plants, planted for the behoof of a former squire, who was blind; the kitchen-garden, all came in for their share of admiration and interest. Some five hundred people visited the gardens.

CHINA ASTERS.—Mr. FREDERICK ROEMER, of Quedlinburg, sends us a plant of his Extra Early Hohenzollern Aster, white; and in proof of the earliness of the flowering season he also sends a plant of Queen of the Market Aster, white. This season the Extra Early Hohenzollern flowered about eight days sooner than Queen of the Market. It has very large white flowers, and is well worth cultivating. M. ROEMER also encloses a plant of his last year's novelty, Helianthus Perleo (Helianthus cucumerifolius nanus compactus). This strain has proved to be a good novelty too. With these came flowers of Nemesis strumosa of the different shades of orange, red, and rose.

OTTERBURN TOWER, NORTHUMBERLAND.—According to *The Builder* this property has been lately in the market, but was withdrawn from sale. The estate comprises about 1320 acres, with the manor of Otterburn, and is situated on the north bank of the Rede. The Tower still includes portions of the stronghold built in the Tudor period. In the Otterburn ward of Elsdon, at the meeting of the Otterburn and the Rede, is the site of the

battle fought on August 10, 1388, between the Earl of Northumberland and his son, Sir Henry Percy, Warden of the Marches, and an invading army of Scots, led by the Earls of Douglas, Moray, and Denbar. As they were returning to Yedburgh from Newcastle, the Scottish forces were entrenched at Green-clesters, where their camp may yet be traced. FROSSARD describes the encounter, and upon the old ballad is founded the modern one of Chevy Chase.

THE WIDENING OF PICCADILLY.—It is now decided that, in view of the Coronation ceremonies next June, the widening of Piccadilly along its southern side by the taking of a strip out of the Green Park, and the setting back of the railings will soon be put in hand. We understand from *The Builder* that plans prepared at the Office of Works provide for an increase of the width of the thoroughfare, which varies from 68 feet to about 100 feet between Walsingham House and Hyde Park Corner. It is hoped that the alterations will be so managed that the large trees that it was at first feared would have to be sacrificed will, after all, remain undisturbed, but, unless the thoroughfare can be widened at its eastern end the proposed alteration will not be of much use.

THE TREE LOBELIAS OF TROPICAL AFRICA.—Our valued correspondent, Mr. W. BOITING HEMSLEY, writes us as follows: "My article on this subject (*Gardeners' Chronicle*, June 29, 1901, p. 417) was written in the Channel Islands, where I had no books for reference, and consequently it is not so complete and correct as it might have been under more favourable circumstances. What I most regret is having quite forgotten an article on the same subject by Mr. EDWARD G. BAKER, which appeared in the *Journal of Botany* for 1891, pp. 65-70, illustrated by plates 410 and 411. Mr. BAKER there gives a synopsis of all the species then known of this group, including two new species, which are fully described and figured. The new species are *L. Gregoriana* and *L. Tayloriana*, Baker f. The former is from Mount Kenia, where it was discovered by Dr. GREGORY, of the British Museum, who states that it grows from 8 to 14 feet, at elevations of 12,500 to 13,500 ft. Some dead ones were found at an elevation of nearly 150,000 ft. *L. Tayloriana* was named in honour of the Rev. W. E. TAYLOR, who first discovered this species on Mount Kilimanjaro, on the slopes above Morang, as far as 10,000 feet. *Lobelia squarrosa*, which I inadvertently attributed to Baker filius, was described by his father, Mr. J. G. BAKER, in the *Kew Bulletin*, *L. telekoi*; Schweinfurth is another species from Mount Kenia, which I had overlooked."

GERMAN IMPORT DUTIES.—Herr LUDWIG MÖLLER gives in the *Gärtnere Zeitung* a list of proposed tariffs on garden produce. Fresh Potatoes are to be allowed free entrance into Germany from August 1 till February 14; from February 15 till July 31 they are to be subject to a duty of 12 marks per 100 kilogrammes. All other fresh vegetables will pay 50 marks between December 1 and June 30; and between July 1 and November 30, 5 marks per 100 kilogrammes. Living trees, plants, shrubs for transplanting, will pay 20 marks; leaves, grasses, &c., for ornamental purposes, 100 marks; fresh flowers, blossoms, buds, &c., 300 marks; Palm-leaves made into fans, 150 marks; and all kinds of bulbs, 10 marks per 100 kilogrammes. Herr MÖLLER gives no hint as to the proposed duty on foreign fruits.

TOO MANY COOKS.—A correspondent writes:—"After years of travail in connection with the acquisition of Spitalfields

Market, the London County Council at their meeting last week determined to have nothing more to do with the scheme. Years since we drew attention to the scheme proposed by the Council, the purchase of all property rights, the getting out of plans, &c., for a new and improved market-place—a long labour which ended in the introduction of a Bill into Parliament, accompanied by one from the Corporation, both of which were remitted for consideration to a committee, which threw over the Corporation Bill. Ultimately, my lords' had the Bill before them, when up started the Stepney Borough Council, who asked for the insertion of a clause enabling them to take over the whole concern from the London County Council; the clause was objected to strenuously by the Council, but the Stepney folks won the day, and, after years of labour and heavy expense, the whole affair has come to an end. The market at the East End is one of great importance—its customers come from all parts of London, principally from the E., N., and N.E. districts, and doubtless 'under new management,' its popularity and usefulness would have greatly increased, to

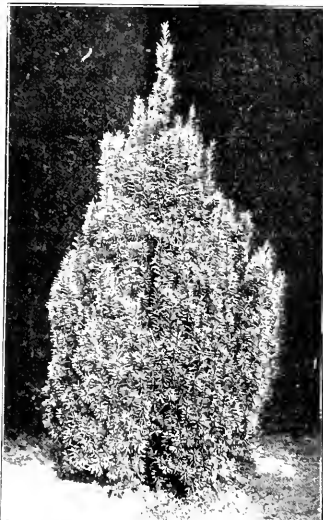


FIG. 38.—TAXUS CANADENSIS.
(See p. 115, col. B.)

the profit of many a market gardener in Essex and elsewhere; nor would the foreign producer have suffered, and the general public would have been the gainers. It is sad to think that a good market could have been built at less cost than the outlay for the abandoned scheme."

PLANT PORTRAITS.

APPEL SCHÖNER VON BOSCOOP (Hemlock of Boskoop, said Monthollet Genevois).—An old variety, whose value is becoming generally recognised in Germany, well adapted as a standard for orchard cultivation, the tree being a vigorous grower, and forming a rounded crown. It is not frost tender, succeeds in exposed positions, and on poor but not dry soils. Leaves early and abundantly. The fruit is large, round to high, and does not wither, and is suitable for the kitchen or for dessert, and it keeps from December to May. Colour greenish-yellow, and red with darker stripes on the sunny side. A coloured drawing is given in a prospectus by M. Paul Hubert, of Halle, on the Waal, attached to *Die Gartenwelt* for July 27, 1901.

MAVÉ LANG-ASSE, André, *Revue Horticole*, August 1, CANADA DEPENSIS, *Revue de l'Horticulture Belge*, August.

CURBANE FAY'S PROLETIC, *Revue Horticole*, August 1. **SCHIZANTHUS WISELOKENSIS**, *Revue de l'Horticulture Belge*, August.

NURSERY NOTES.

THE HANDSWORTH NURSERIES, SHEFFIELD.

SOME four miles or so distant from the heart of the busy borough of Sheffield are the Royal Handsworth Nurseries of Messrs. Fisher, Son, & Sibray, Ltd., whose business was commenced in a very small way about the middle of the 18th century. Some of our readers will probably remember that years ago Mr. Fisher and Mr. Sibray were the active and controlling members of the firm. But the personality having altered, the Chairman and Managing Director is now Mr. William Atkinson; whilst his son, Mr. W. Penrose-Atkinson, is a director also.

Some part of the present nursery ground has, no doubt, been devoted to the cultivation of nursery stock for many years; but other portions have been acquired during recent years, as the increased needs of the business have demanded a greater area upon which to raise plants for supply. This area is now about 200 acres, of which 120 acres are at Handsworth, the other 70 acres being at some distance from the home establishment. To some of our readers who may not have seen these nurseries, and who look upon the firm as essentially a hardy tree and shrub cultivators, it will seem strange if we refer first to—

PLANTS UNDER GLASS.

But it was in the glasshouses that we commenced our inspection of the place on a recent occasion, and so pleased were we at the general appearance of the plants therein, that there seems no apology necessary for adhering to the same plan now, and it will involve no disparagement to the outdoor department, the management of which merits all possible praise.

The glasshouses afford an explanation of the circumstances by which the firm is able year after year to exhibit at the Royal Horticultural Society's "Temple" show, in May, so fine a collection of choice varieties of trees and shrubs in pots, many of them deciduous species, in a condition considerably more forward than the same species would be out-of-doors at the time, even in the south. These plants are encouraged to make early growth in a first-rate house or spacious corridor, from which open out, upon one side only, eight excellent plant-houses 100 feet in length each. The corridor, unlike the houses, is maintained at a temperature little higher than that of the Temperate-house at Kew, though there exists means of increasing it when desired. When we saw the structure, some of the plants one sees at the Temple had been removed out-of-doors, but it contained splendid specimens of greenhouse ornamental species, and others of a half hardy nature.

One of the houses that open from the corridor was filled with excellent pot plants of *Lapageria*, and from every plant strings were taken to the roof of the house; the young growths being tied in as often as necessary, are kept free from entanglement with each other—and in the best possible condition for taking down at the end of the growing season, and wrapping around the stakes in each pot.

In one house were plenty of *Odontoglossums* of different species; and in another a collection of miscellaneous species of Orchids requiring increased warmth, as *Laelias*, *Cattleyas*, *Coleogyas*, *Dendrobiums*, &c. *Cypripedium Mastersonianum* was in flower, as was also *C. Druryi*, a striped flower upon a yellow ground

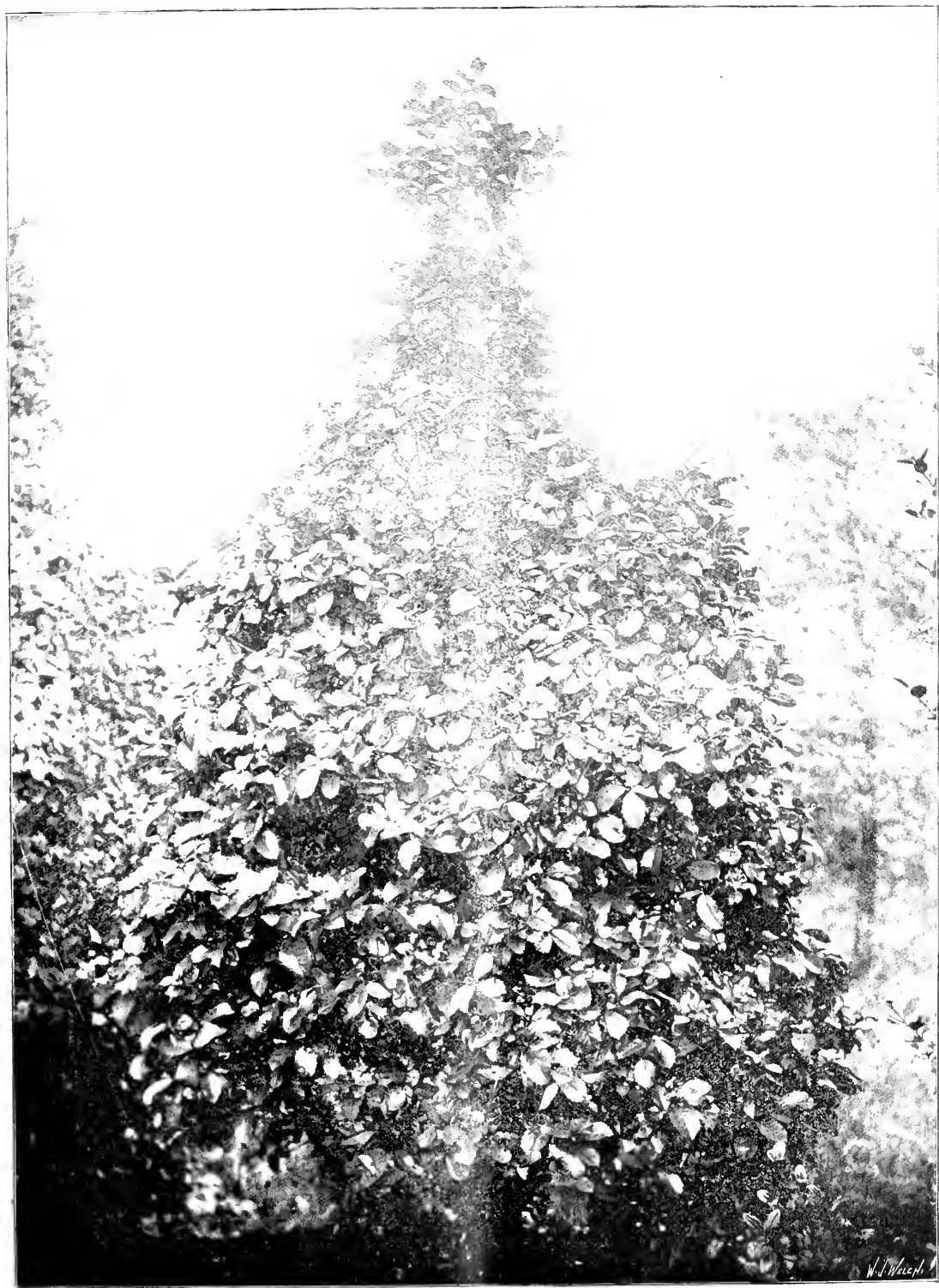


FIG. 36.—SPECIMEN PLANT OF ILEX WILSONI, IN MESSRS. FISHER, SON, AND SIBBAY'S NURSERY. (SEE P. 118.)

The fragile-looking *Aralias* are grown in great numbers at Handsworth, and each plant is a representation of perfect cultivation. A. elegantissima was present in a bigger batch than that of any other variety. In addition to those kinds in general cultivation, there was a batch of plants of a sort resembling in general habit *A. gracillimum*, but the leaves are very pale green, with flesh-coloured midrib, and a somewhat silvery appearance.

A stove with miscellaneous contents contained fine batches of *Caladiums* and *Anthuriums*, of which some good seedling forms of *A. Scherzerianum* were remarked; *Eucharis grandiflora*, *Codiaeums*, and *Cordylines*, as well coloured as the best collections in the south; and several species of ornamental plants less common in gardens.

The greenhouse section of *Rhododendron* is cultivated in large numbers, one of two new houses that were erected last year being filled with good plants. These were not in flower, but Mr. Atkinson showed us four new varieties the firm will distribute, and described them as follows:—*R. jasminiflorum* "Handswoth variety," with longer tube than the flowers of the type possess, and that quite conceal the stamens; Duchess of Portland, blush-pink; Countess of Yarborough, a white variety, which, except in the colour of the flowers is very similar to the well-known Princess Royal; and Duchess of Westminster, a cross from *R. Taylori* and *R. jasminiflorum*, which partakes of the characteristics of *R. T. rubra*. In a stock of varieties of *Rhododendron* (*Azalea*) *indicum* we were shown a variety of *R. amena* named *Posteriana*, which is described as having brilliant red flowers, and to those who admire the exceedingly free-flowering qualities of *R. amena*, but who do not like the colour of the blooming, this red one should be greatly appreciated.

Palms, and many other species of plants, are cultivated in these houses, but we cannot enumerate many more. Amongst a few plants we must mention, however, is a collection of *Sarracenia*s, including *Cheloni* hybrids, which were in capital condition, and possessed unusually good colour. These were growing in full sunshine, and are watered overhead three or more times a day.

In the corridor already alluded to, and in other houses, we saw some of the best specimens of several greenhouse species of ornamental plants that we have seen for a long time. These included *Araucaria excelsa*, 7 feet high, splendid plants, unusually glaucous, bigger and nobler in all their parts than the type. The variety was said to be "Napoleon Baumann," and greatly impressed us with its majestic appearance. *A. Cunninghamii*, a very elegant species, nearly 4 feet high; *Draecena australasica*, with leaves something like those of *D. indivisa*, but with red midrib; *D. lentiginosa*, *Aralia pulchra*, 8 feet high, which Mr. Atkinson says has proved effective for sub-tropical bedding; *Elaeagnus*, useful for interspersing with the delicate Japanese Maples, &c. Of the Maples themselves, the Handswoth firm has a prodigious stock, including infinite variety, but as they have so frequently been exhibited, we need not now refer to them in detail. A variety of *Plumium tenax*, with much variegation, and brownish-red margins to the leaves, must complete our reference to inside plants.

HOLLIES AND YEW, &c.

The out-door grounds are so full of interesting plants that we hardly know which to remark upon in the space at our disposal, but the very fine Hollies and Yews are certainly amongst the strongest features the nurseries possess. The Handswoth firm has introduced

to commerce a good number of varieties of Holly, of which Handswoth Silver Striped, Mundy, and Wilson are most valued. There are large stocks of saleable plants of these and all other desirable Hollies of every section. In a corner of the nursery there are handsome specimen plants of all the varieties that have been raised at Handswoth, and others. The visitor is bound to admire these noble plants, most of which are pyramidal or cone shaped, for when thus far developed, the characteristics of each variety become plainly marked, in the green-leaved section as well as those variegated with silver and gold colour. In photographs, one of which we reproduce on page 119, of *Ilex Wilsoni*, a correct illustration is given of the ornamental character of specimen Hollies. *I. Wilsoni* has big leaves, rather larger than those of *I. Shepherdi*; they are unusually thick, and the plants bear berries. The variety was awarded a First-class Certificate by the Royal Horticultural Society in May, 1899. Handswoth Silver Striped makes a very shapely plant, and is evidently of good constitution. *I. Handswothensis* belongs to the small green-leaved section; they are flat, and have long spines. *Marnocki*, has dark foliage, and at Handswoth produces berries of large size and brilliant colour on two and three years old wood. Among the seedling Hollies, which have been raised from the best of the named sorts with green leaves, are numerous forms that would fulfil the requirements of individual tastes. These Hollies and Yews, like everything else in this nursery, are of the very best quality; they are cultivated well, with ground around each of them, exposed on all sides to the influences of sun and wind, and there is no crowding observable anywhere. Fewer plants to the acre can be grown in this manner, but they make satisfactory progress, and succeed well in any suitable locality to which they are eventually removed.

The Yews are in every respect as good in condition as the Hollies, and in addition to the well-known English (*Taxus baccata*) and Irish (*T. fastigiata*) Yews, there are endless varieties of either, and some that may even be hybrids, that are of exceeding interest. *T. adpressa* (Gordon), regarded as a species by some, and as a variety merely of *T. baccata* by others, is not only a good, deep green-coloured plant itself, but has given a wonderful variety of seedlings. The new golden-leaved variety, known as *grandis*, and shown in fig. 35, is probably one of its seedlings, and may be strongly recommended as a gold-variegated form of that type. *T. adpressa variegata*, also raised at Handswoth, and awarded a First-class Certificate by the Royal Horticultural Society on August 27, 1889, was present in considerable quantities, as were the golden variegated Irish Yew, the variegated Devonston Yew, the golden English Yew, &c.

To be continued.

LAW NOTE.

THE BRITISH HORTICULTURAL ASSOCIATION, LTD., (BANKRUPTCY CASE).

A SITTING for the public examination of certain persons connected with this company was held at the London Bankruptcy Court, before Mr. Registrar Hood. It appeared that the Association was incorporated on December 20, 1898, to carry on business as nurserymen and florists, and to enter into an agreement with George Haynes and Edwin Thomas, the voluntary liquidators of the Metropolitan United Floral Company, Ltd., whose share-

holders were to receive shares in the Association.

The winding-up order was made in October, 1900, and the statement of affairs showed unsecured liabilities £2,659, and assets nil. The total deficiency as regarded contributories amounted to £11,566.

Mr. E. T. Morgans stated that he was secretary of the Metropolitan United Floral Company, Ltd. He had also been known under the name of Edwin Thomas, and had used the name of Thomas Morgans. The promoter and managing director of the Metropolitan United Floral Company was Mr. Greenfield. That gentleman offered him the post of secretary, and he accepted it, as he was able to do the work during the evening. He was otherwise engaged during the day. He also stipulated that as secretary he should drop his surname, and use the name of Edwin Thomas. Mr. Greenfield had no objection to that, as he only wanted the work done properly. Witness received 10s. per week as salary.

Witness was questioned at some length with regard to the sale of shares of the British Horticultural Association, from which it appeared that advertisements were inserted in the newspapers. The shares thus offered were stated to be in a well-known commercial company, possessing a great future and paying 20 per cent. The owner needed money, and the offer was described as an unusual opportunity. Witness had acquired shares from Mr. Greenfield and others, and he applied the monies received from the advertisements in payment of those shares, and estimated that he made a gross profit of about 10 per cent. for himself out of the sales.

The Official Receiver: Having sold some ordinary shares to a lady, you write to her stating that as you had also £200 of preference shares for sale, you thought as a matter of courtesy that you ought to make her the first offer of them?

Witness said that was so, but the lady did not purchase the preference shares.

Witness, on being further examined, said he became connected with the company with a view to making money, but instead of that he lost money.

Mr. W. Fallas, who succeeded "Edwin Thomas" as secretary, said he became a director in 1899. No dividend had been paid to the shareholders.

In reply to Mr. Alexander Thomas, he admitted that it was stated that the company had a large and valuable connection among the moneyed classes.

Mr. Thomas: You were very fond of the expression "the moneyed classes." Who invented it?

Witness: I do not know.

Mr. A. H. B. Greenfield said the businesses which the Metropolitan United Floral Company was formed to acquire, were valued by Mr. Frederick Knights at £6,100. Mr. Knights was in his employment, but he had a larger salary than 16s. per week. There was no ground whatever for the suggestion that the valuation had been written out at witness's suggestion.

Eventually the examination was closed.

NEW INVENTIONS.

A NEW KIND OF BAND FOR FRUIT TREES.

A TRAP girdle for insects frequenting fruit-trees, the so-called Hofmeister Gürtel, has been brought into commerce by M. Richard Zorn, of Hofheim, in Taunus. It consists of corrugated sheets of thick paper or cardboard,

one being laid on the top of the other, and bound round the stems of the trees in the form of broad bands. The corrugations afford just the right kind of hiding-places for insects during the winter season, and immense numbers of them may be destroyed by detaching the bands, and immersing them in boiling water. When the girdle is dried, it may be used again. The fibrous materials out of which the girdle is manufactured has the advantage that it is used by various water-pipers in spinning their cocoons and webs. The girdle is covered on the outer side with a piece of waterproof paper, which can be smeared with the usual sticky grease that is used to arrest the ascent of the winter-moth. If, when a girdle is bound to the stem of a tree, the inequalities of the bark do not permit it to lie quite close to the trunk, and there are interstices by means of which insects could creep up the stem, these are closed by pressing in a fillet of clay along the upper edge of the paper. "*Illustrirte Garten Zeitung*" for July.

HOME CORRESPONDENCE.

FLOWER-SHOW TENTS.—Probably everywhere on hot days the excessive heat found in flower-show tents makes itself felt. We well remember how distressing it was in most of the tents at the Temple Show and at the Lily Conference at Chiswick. The heat was as trying in the fine tents provided at Richmond, and was specially marked in the huge one provided for the National Rose Society's display, causing the flowers to suffer and drop excessively quite early. One reason for this great heat was the pitching of the tents in a stereotyped way in a sort of half-circle, end on end, thus making a bold show of canvas, but in all cases enabling the sun to play with no less force broadside on the tents, and with potent effect. Those who wish to keep their tents as cool as possible during the sun's meridian should pitch tents not quite north and south, but slightly south-west and north-east; the sun would not play with such force on the eastern side early in the day as it would on the western side later. But without doubt the greatest heat force is exercised on the south side from 12 P.M. to 3 P.M., whereas were the tents' end on at that time to the sun, the effect would be greatly weakened. It seems never to occur to tent-erectors that abundant ventilation is needed, and they put up all the canvas to fit close and tight. Yet in the hot days in autumn, how wise would it be to keep the shady sides very open, either above the flowers or below. It is not merely that flowers suffer at shows in such great heat; visitors suffer also, and instead of enjoying a show, look on the exhibits cursorily and wearily, then gladly get outside for relief. *A. D.*

WEeping ELM, WITH IVY.—Having hundreds of trees with ivy upon them, at certain times the ivy is cut right up as high as I can fancy; but I do not consider it so injurious as many may suppose it to be. I have three Lombardy Poplars, from 70 to 80 feet high or more, about equal in height; one is bound up with ivy, which at the base is 1 foot diameter or more, and the tree looks like being bound with large cords in every cross way; but occasionally this Sampson bursts the ivy, and then it hangs loose from the tree. Now, respecting those three, there is not a bit of difference to be seen in their appearance or health; so that I consider it is not injurious to this species. But as for the Elm, I should leave it on the tree if I admitted it being there, and cut all the upper portion off as far as it was left; and I think no injury will occur, and the tree with the green stem will be very pleasing to my eye at least. But many men, many minds—that is my view of it. I know if the ivy gets the master of its supporter, and entirely covers the top, it will kill it, of course slowly smothering it. *J. C.*

SOME HERESIES—NOT PROVEN.—It is hardly fair to the practical gardener, for a visitor, after passing through one winery without fire-heat, to suggest that fire-heat is unnecessary for the cultivation of such varieties of grapes as Black Hamburg, Lady Downes Seedling, and Muscat of Alexandria (see ante, p. 78). It is not remarkable to get a good set without fire-heat, as the atmosphere can easily be kept correspondingly dry to aid in the fertilisation of the flowers, but it would be remarkable to finish properly any variety of Muscats without fire-heat. This season, the weather during April and May was exceptionally dry. I hope "W." will enlighten us later in the season with regard to growing Muscats without fire-heat, as the tuel bill is a serious item in the financial accounts of a garden. *C. P. C.*—Our correspondent's words were "This seems to suggest that a high temperature is not always required for Muscats when in bloom." *Ed.*

MONTERETIA GERMANIA.—Earlier in the year I spoke in the columns of the *Gardeners' Chronicle* of the coming of this excellent plant. The plant has now flowered, and on Tuesday week last was shown from two different sources. Without doubt, it merits every word of praise that has been given it. The plant has been obtained by crossing the well-known *Crocsmia aurea imperialis* with some of the more vigorous-growing of the *Montretias*, and certainly the larger, more widely-expanding, and flatter flowers of the *Crocsmia* are readily seen in the new kind. But however good the Drill Hall examples were, the plant growing in the open is much more promising, by reason of its greater vigor and freedom. This much may be said from small corns that were planted quite late. Each corn has developed two fine flowering growths. At present, however, my plants are only in bud. The plant may be described as *Crocsmia imperialis*, possessing the hardness and freedom to flower of the best *Montretias*. It is earlier, too, than are *Montretias* generally, and in the size of its flowers and the decided self-toned, deep red-orange, it is in every way distinctly meritorious as a garden plant. *E. H. Jenkins, Hampton Hill.*

MELONS CROPPING FREELY.—Looking through the garden at Holly Bowers, Chislehurst, Kent, recently, I noticed a splendid crop of Melons. There were twelve plants carrying forty capital fruits of an estimated total weight of 120 lb. They were growing in a small, 10-foot span-house, which allowed barely 15 inches space between the plants. *H. S.*

WEEDS ON LAWN.—Of all the pests that infest a lawn, I find the common Yarrow (*Achillea Millefolium*) the most difficult to get rid of. It has covered large patches in my lawn. It would be endless trouble to try to pull out every bit of its running roots, and I do not wish to have the expense and unsightliness of taking up all the patches and resodding and re-sowing them. What can you recommend as the best method of exterminating it? Will any of the lawn-sands or lawn-manures destroy it and give the grass the victory in the struggle between the two? The long season of hot, dry weather has made the Yarrow stronger and thicker than ever, and the grass weaker. *Despondent.*—If you keep it well mown it will not be objectionable. Any thing that favours the growth of the grasses, such as sulphate of ammonia, &c., will correspondingly injure the weeds. *Ed.*

CROPPING OF FIGS IN ISLE OF WIGHT.—I have read with interest your account of the fruit crops in the different counties of England. I have lived in the Isle of Wight for a very long time, and I have never seen anything like the crop of Figs, which seemed to be coming in my garden (St. John's Vineyard, Ryde) when I left the place about ten days ago. Mr. Meham of St. Clare, used to say that abundance or scarcity, with regard to Figs, turned absolutely on the temperature of the month of May, and this year he is conspicuously right. We had no frosts at all in May, and we have a super-

abundance of Figs. I wonder if it is so in other parts of the country? Worthing, for instance. *H. Eiebank (Rev.).*

WALL GARDENS.—I have a long low wall with a flat top, 18 inches wide, on which I wish to grow about a score kinds of the most beautiful alpine and rock plants suitable for such a position. I intend to put bricks on edge all along the outer edges of the wall-top, and to fill the space between them with soil for the plants to grow in. With so shallow a depth of soil in so dry a position, judgment and experience are needed for the selection of suitable plants, and I shall be glad to have your correspondents' advice. Moreover, the plants must be perfectly hardy for this inclement climate, and I also wish to have only such kinds as flower very profusely, and are brilliant or attractive in colours (no whites, or only one or two, wanted). They must also be dwarf for such a situation, and some of them should over-flow the brick edging, and hang down the face of the wall. I should allow to each kind of plant a space of about a yard in length. As I wish to prepare this wall-garden soon, I should like to know what kind, or mixture of soils would be the most suitable for the majority of the plants, and also whether autumn or spring would be the safest time for planting them. Please mention the colour of each that is recommended. *Stonecrop (Lancashire).*—We recommend our correspondent to consult Miss Jekyll's *Wall and Water Garden*, and shall be glad to record the experience of our correspondents, if they will oblige us with their remarks. *Ed.*

STRAWBERRY VEITCH'S PERFECTION, AND OTHERS.—I am sorry to hear that this Strawberry is a shy bearer with some growers. It may not be free enough for market growing, but for private consumption where very high-class Strawberries are appreciated, I am confident to Strawberry in cultivation is of better flavour or brighter appearance. We have had it here from the first, and never failed to have a good crop. We have a patch growing on a border facing north which supplied us with good fruit until the end of July. Our soil is far from being a good Strawberry soil; it is of a very dry nature, and requires very much manure. We have a good depth of workable soil, resting on 8 or 10 feet of sand and gravel, so that the water and manure pass away quickly. By the following treatment we seldom fail to have a good crop of Strawberry's of good quality, but the beds have to be renewed every two years. We layer in large 60's pots as soon as it is possible to get young layers. When the young plants are established, they are planted in well prepared quarters, and should the weather be dry, these young beds need to be afforded the same attention as regards water as plants required for forcing the following spring. It is no use to put out half-starved runners at the end of September, and expect to get from them a crop of good fruit the following summer. I do not believe in mulching the beds in autumn with strong farmyard-manure, but just as the flower-spikes begin to open we shake between the rows a little artificial manure—any of the well-known Vine and fruit manures. The following varieties we find do well in this garden, as well as that above mentioned; but they are not so good in flavour: *Gimton Park*, a grand cropper of good quality; *Latest-of-All*, heavy cropper for late supply; *Leader*, enormous cropper and size; *Royal Sovereign*, for early supply, and for pots; *Trafalgar*, very large, good Pine flavour; *Veitch's Prolific*, heavy cropper, a very long time in use, not ripening its fruits at one time. *F. J. Thorne, Southampton Park Gardens, Becks.*

GENISTA VIRGATA.—One of the best flowering shrubs in my garden just now is *Genista virgata*. It is not much as a small plant, but my plant is now 7 feet high and 2 feet across, and very showy. It has been in bloom two weeks, and will continue another two. Its general effect is like a small edition of *Spartium pinnatum*, and seems perfectly hardy. *W. R. Fyler, Verwood, Dorset, July 31.*

PROLIFEROUS ROSE.—I enclose Rose, which you will see now has its third flower in succession from the same stem. It was grown by A. H. Cole, Esq., the Star Hotel, London Road, Croydon, Wm. Purvis, Croydon. [A prolificiferous Rose, in which two flowers were formed, one above another, from the centre of the primary Rose, Ed.]

FREE AND PLANT LABELS.—I quite agree with what Mr. Harrison Weir last week wrote on p. 86 of the last issue of *The Gardeners' Chronicle*, except that he does not mention the best label, which is an embossed lead or zinc label. This lasts for years, and should anyone send out plants with it, I am sure he would command an increased sale. J. W. Groomes, *Wargrave Lodge, Wargrave-on-Thames, Berks.*

— I read Mr. Harrison Weir's interesting article with much interest, but I should like to remind Mr. Weir that what he proposes, viz., that the nurseryman should attach permanent labels to trees and plants at the time of sending them from the nursery, is no new idea. I believe that any respectable nurseryman will be pleased to do this when so desired. I have never experienced any difficulty in this matter. I have found that all that is necessary is to order the kind of label one wishes, and the kind of wire to be used (which should be copper, or some kind which will not rust), and the trees or plants will arrive with them attached. I have used the "Stratford" label rather extensively, but I like the "Acme" much better; it is neater, and will last a lifetime. For pot-plants I have also used the "Acme," also the "Celluloid," and both are durable and neat. It must, of course, be understood that these labels will be extra to the cost of trees or plants. But in no case have I known any nurseryman charge more than the usual retail price, that is, they charge nothing for the labour of placing the labels on the trees. I quite agree with Mr. Weir that if this were universal, very much annoyance and disappointment would be saved. *T. Arnold, The Gardens, Cirencester House.*

A NEW PLUM.—Right in the midst of the large collection of bush Plum-trees growing at Chiswick is a tree of a variety not there several years since by the well known firm of John Fraser & Co., then of Lea Bridge, under the name of Fraser's Early Yellow. When the Fruit Committee was taken to see it on Aug. 2, they found a bush of somewhat dense, erect growth, that it was evident had been heavily laden with pretty bright yellow fruits, oval in shape, about the size of a blackbird's egg, and parting freely from the stone. The fruits have no special flavour, but they ripened the earliest of all Plums, being ready for gathering on July 17. They are a week earlier than those of Rivers' Favorite, which here is even earlier than Rivers' Early Profile. The Committee regarded this Plum as being for cooking purposes, and especially for market, a valuable acquisition, and unanimously agreed that it be recommended for a First-class Certificate. X.

Obituary.

JOSEPH MEREDITH.—Many of our older readers will regret to learn of the death, on the 5th inst., of the well known Grape-grower, Joseph Meredith, late of the Vineyard, Garston, at his home, Rose Mount, Offley Hay, near Ecclestone, Staffs. So passes from the scene of his labours one who was renowned for good cultivation, and up to the last a keen gardener. It is almost a coincidence that the place he created and gave such a famous name to has also ceased to exist, a railway having taken the ground. The deceased's prize winnings will be well known to old Grape-growers, and his most notable prize, that of her late Majesty Queen Victoria, which took the form of a cup, which he won in face of the best Grape-growers of two continents, in the City of Hamburg, has never yet been surpassed.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 20.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Drury, Saunders, and Bowles; Drs. Muller, Cooke, and Rendle; Prof. Hartog; Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.; Visitor, M. Mary Mitchell, President of the Horticultural Society, Geneva.

Helianthus, supposed hybrid.—Mr. Bullman sent a flower, of which he writes:—"I think it is a real hybrid, the seed-bearing parent was the annual variety north-of with Harpalium, and possibly with *H. multiflorus* as well." Not having blossoms of the parents for comparison, it was thought inadvisable to express an opinion as to the true nature of the hybrid.

Potatoe.—Leaves of Peas attacked by this common parasite were received through Mr. Grant, of the Yorkshire College, Leeds, from Mr. G. Broche, of The Gardens, Gimble Park, Solihull. This insect is practically not injurious to the trees unless in excessive quantity. M. Mitchell observed that such was also the experience of fruit-growers in Geneva.

Eggs on Apple-stems.—CAPTAIN SHORE, F.R.H.S., sent specimens, observing that "a pound of Apples were bought in Worthing about April. They were of Tasmania origin, and on the stalk of each, as well as on the hollow portion of the Apple adjoining the stalk, were some reddish eggs." Mr. SAUNDERS undertook to examine them.

Apples split.—Mr. WOODS observed that he had noticed that many Apples had the flesh split open this season, but not the stones. Mr. BOWLES remarked that he had experienced a similar occurrence in previous years, and attributed it to the extreme drought.

Cowslip potatoes.—Dr. MASTERS exhibited flowers of both male and female Cowslips in which the axes had thrown out other blossoms. He undertook to report upon the monstrosity. It was, however, a remarkable fact that the three specimens came from Ireland, Dorsetshire, and Middlesex, respectively, within a few weeks of each other. As far as he knows, no such occurrence has ever been recorded.

Wood Leaved Malva.—Young Ash-trees were received from Mr. L. Lloyd, F.R.H.S., of Blandford Lodge, Chiswick, who observes that "the whole tree, the stem being a foot thick, and branches, were all barked. The tree is about 100 feet high. Similar borings occur in both *Lilac* and *Laburnum*."

CHISWICK

AUGUST 2.—A meeting of the Fruit and Vegetable Committee was held here on this date. **Present:** Mr. J. Wright, V.M.H., in the Chair; and Messrs. W. Farr, G. Woodward, G. Wythes, J. Mortimer, G. Kell, H. Esling, and A. Dean. As the full quota of nine members was not made, no Awards of Merit could be given, a matter which was much commented on, as no committee sitting at the Drill Hall, however large, can form so exact an estimate of the merits of Chiswick-grown products as can those members who see them growing. Out of a large collection of Potatoes, some old for comparison, but mostly new, some twenty first and second early varieties were lifted, and of these five were selected for cooking, a test that is always well conducted at Chiswick. Of these, three marks were given to Early Jubilee, a dattish, white Kidney, having short top, ready on July 31, and of excellent quality; to Sharps' Express, also white, and a capital cropper; and to glory of Donagh, oval, white, round, excellent cropper, and unequalled. Two marks were given to King of the Earths, dattish, white, round, very early, and good cropper. The remainder of the Potatoes will be seen a few weeks later. A large group of some thirty stocks of Cabbage was next seen. The larger number, however, were late, and far too coarse for garden culture. The seed in each case was sown on March 5. Seed of each stock will be sown again this month for a winter and spring trial. Three marks were given to Barr's Best-of-All, having solid, green hearts of very conical form; also to Barr's Little Queen, a good selection from Ellan's Early, and here better than the stock under that name; and Improved Nonpareil, from NEPTING & Co., the best of the several stocks of that old variety. Some fairly good hearting Cabbages gave an excess of outer leaves. A small trial of dwarf Kidney Beans on a south border showed two varieties of exceptional excellence.

Surrey Profile, a thin-seeded sport from Sutton's Magnum Bonum, beans long, straight, and hand-one; and Fawn, the seed khaki-coloured, a sport from Synthle's Goshalt, beans long, very ham-tone, green, and smooth. Mr. GEORGE WOODWARD brought up from Barham Court, Maidstone, fruits of a Gooseberry, loose and on branches, the latter showing marvellous protractancy; a very large green and white Gooseberry, locally known as Howard's Lancer. The fruits were exceedingly nice. Mr. Woodward stated that it was not only the greatest cropper, but the earliest to furnish green Gooseberries for gathering he had ever seen.

It was unanimously agreed that this Gooseberry and all the things receiving three marks that day, be recommended to the next full meeting of the committee for Awards of Merit.

Mr. JOHN WRIGHT, at the request of the committee, undertook to write to the council and ask that Mr. S. T. Wright be empowered to vote as a member at the Chiswick meetings.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 18.—The following awards were made at the meeting held on the above date:—

FIRST-CLASS CERTIFICATE.

Acineta Hibernica, Charlesworth & Co.
Cypripedium & *L. Anson*, G. W. Law, Schofield.

AWARDS OF MERIT.

Cattleya gress var. J. Richardson, J. Richardson, Esq.
Cattleya Gaskelliana var. Mrs. Hamer Bass, Hon. Mrs. Bass.
Cattleya × *Martiniana*, P. Sander & Co.
Cypripedium *Kingdianum*, Low's var., H. Low & Co.

CULTURAL CERTIFICATE.

Odontoglossum crispum Needwood var., Hon. Mrs. Bass.

MID-ANNANDALE HORTICULTURAL.

JULY 27.—The annual show was held at Lockerbie on the above date, and proved highly successful, the entries being quite up to the standard of former years. Fruit showed a slight falling off in respect of numbers, but the exhibits were better in quality than they have been for a number of years. The floral display was enhanced by an attractive stand of Roses shown by Messrs. J. PALMER & SONS, Annan. The majority of the prizes in the vegetable department were carried off by Mr. J. McDONALD, got to Miss JARDINE, of Dryfeholm; Mr. W. M. LEAN, got to JARDINE PATERSON, Esq., of Balgray; and Mrs. FARRELL, Eaglesfield; Mr. M'LEAN, Mr. McDONALD, and Mr. J. Allan, got to JOHN PATERSON, Esq., of Arindell House, Dumfriesshire, were the principal prize-takers in the fruit sections.

The show of Turnips, Potatoes, and Onions was particularly good, and the 1st prize for a collection of vegetables was awarded to Miss MARGIE CARLILE, Balgray.

THE MIDLAND CARNATION AND PICOTEE.

JULY 28, AUGUST 1.—This was the eleventh exhibition of this Society, which has grown materially in strength during the last six years. The very fine blooms which Messrs. JONES, BROWN, and SMITH are able to grow at Handsworth; and Mr. R. SWENHAM in the Bristol Road, Birmingham, shows that the Carnation is an excellent town flower, despite the incidences of climate and atmosphere. It generally happens that some one exhibitor exhibits in unusually strong character, and on this occasion Mr. R. CRIVAN (CARTWRIGHT), who resides at King's Norton, was victorious all along the line, showing flowers of the finest quality in most of the classes in which he competed.

The show was held, as usual, in the Exhibition-house of the Botanical Gardens, and Mr. W. B. LAYHAM, the Curator, had set up in every available spot neatly-draped tables; on each side of the Exhibition-house the cut blooms were backed by foliaged plants of various kinds, or else by equally flowered Picotees; and overhead stretched for a considerable distance flowering branches of Bourgevinville variegata, *Lagereria rosea*, and festoons of *Cubaea scandens* albiflora.

A glance over the tables showed that while the selfs, yellow-grounds, and tonics were very fine in quality, many of Mr. MARTIN R. SMITH'S and Mr. DOUGLASS BAIRD'S blooms were in extremely good character, the white sport, however, and white Carnations and edged Picotees lacked size, substance, and marking, the summer heat and drought were too much for them; the flowers were brought on to maturity quickly, and had not time to mature their substance.

Carnations, selfs.—There were eight competing stands of twelve varieties in class 1. Mr. R. C. CARTWRIGHT,

Shirley, Southampton, secured the leading award for a group that had but few faults. Mr. G. Best, gr. to R. F. LEVING, Esq., The Vine, Basingstoke, was 2nd. Mr. PEEL was also very successful in the classes for specimen plants.

Suit-wooded plants such as Begonias, Fuchsias, Colons, and Pelargoniums, were shown creditably. Cut flowers were a feature of the show. Roses were well staged by Mr. W. Neville, gr. to F. W. FLOTT, Esq., Twyford, Winchester, in the classes for twenty-four distinct; for The Vine, Basingstoke, and the same number of P. V. varieties.

Herbaceous flowers were numerous and good. For twelve bunches, Mr. B. LADHAMS, The Nurseries, Shirley, Southampton, easily won premier award with a grand display of such choice sorts as *Coropsis Eldorado*, *Gaillardia "Roundhubs"* Queen, *Platycodon grandiflorum albina*, *Trifolium Otto Erikel*, &c. Mr. W. Hunt, gr. to J. Moss, Esq., Blackwater, was 2nd.

There was a class for a collection of flowers grown out-of-doors to occupy a table space of 6 feet run. Mr. HENT secured the premier prize with a bold group of such flowers as *Glaucidium bronchelyensis*, *Lilium*, *Monarda didyma*, *Pilox*, *Scabiosa*, &c. All tastefully displayed. Mr. W. Temple, gr. to W. R. MITCHELL, Esq., Ibsen Grange, Basingstoke, was 2nd.

Cactus Dahlias were good. For twelve bunches distinct, Mr. S. CLIFTON, Winchester, won 1st prize. Mr. HENT won for Sweet Peas among five competitors with representative collection.

Fruit was a feature of the show. Mr. Bowerman, gr. to Lord Bolton, Hockwood Park, Basingstoke, won for six dishes with really fine Grapes, Melons, Peaches, and Neectarines. The best black Hamburgh Grapes came from Tibley Hall, Basingstoke, where Mr. PHILLIPS (gr. Mr. J. Foster), had succeeded in colouring them perfectly.

Mr. BOWERMAN won premier prize for two bunches of any other black Grape, and for two of any other white.

Peaches, Neectarines, Cherries, Apples, and Plums, were well represented.

Vegetables were numerous and good. Mr. BOWERMAN was the chief prize winner for a collection, closely followed by Mr. BEST and Mr. Kuehler, gr. to Sir WYNHAM PORTER, Malshanger Park, Basingstoke.

NON-COMPETITIVE EXHIBITS

Mr. B. LADHAMS arranged a display of hardy cut flowers.

Messrs. G. J. KIMM & SONS, Woking, staged herba ceous flowers and cut roses.

ABBEY FLOWER SHOW, LEICESTER.

August 6, 7.—This show is an annual fixture, looked forward to with great interest by the inhabitants of this thriving town. It is held in the most spacious of the municipal parks, which, under the care of Mr. John Linn, is fast now to be seen in the full flush of its summer beauty. The committee of the Abbey Park flower-show is composed wholly of the members of the Corporation of Leicester; any surplus derived from a show is devoted to beautifying the town in some way, or in adding to the attraction of the four or five public parks provided by the municipal authorities. There are a large number of allotment gardens in and about Leicester, and many of the artisans are keen gardeners. Further, the present Mayor, through the local branch of the Kyrle Society, has placed in the Society's hands the sum of £50 to be given as special prizes for the best-kept allotment gardens. The weather, though dull, was fine and cool, and an enormous number of people visited the show on the opening day.

PLANTS

are not generally a leading feature at Leicester. The first six stove and greenhouse plants came from Mr. W. VANCE, Leamington, Mr. W. Blakeway, gr. to P. H. MENEZ, Esq., M. P., Rugby, was 2nd. Mr. BRAKEWAY had the first six specimen Ferns.

Groups arranged for effect in a space of 60 superficial feet were a great feature, quite a line of them filling the interior of a large tent. Mr. CYPRICK, of Cheltenham, a event last year appears to have of the 1st in a group at Leicester, as all that competed followed the method adopted by Mr. CYPRICK, who obtained the 1st prize of £20, with a group so refined and effective, that it left nothing to be desired. Mr. J. Thompson, gr. to J. W. TURNER, Esq., Littleover, Here, was a very good 2nd, and two other prizes were awarded.

CUT FLOWERS

There was but one collection of hardy herbaceous cut flowers to occupy a space of 5 superficial feet. That from Messrs. HAINES & SONS, Bedale and Hethel, and a very excellent collection of bold and striking effects it was. In addition to the 1st prize of £5, a gold medal was also awarded.

ROSES

These are always a prime feature at Leicester, and though the season is somewhat advanced, some very

good blooms were staged. The best thirty-six varieties came from Messrs. A. DICKSON & SONS, Newtownards, Belfast, 2nd, Messrs. D. & W. CROFT, nurserymen, Dundee.

With twenty-four varieties, Messrs. D. & W. CROFT came to the fore; Messrs. A. DICKSON & SONS took 2nd place.

Messrs. A. DICKSON & SONS had the best twelve Teas, which included Mrs. E. Mawley, *Manan Cochet*, *Saint-Catherine*, *Yardon*, *The Bride*, *Cherise Maréchal*, *Bridesmaid*, *Imogene*, *Pirola*, *Muriel*, *Graham*, *Princess of Wales*, &c.; Messrs. D. & W. CROFT were 2nd.

With twelve Roses one variety, Messrs. DICKSON & SONS and Messrs. CROFT were placed equal 1st, the one with J. S. Mill the other with Alfred Colomb. Mr. FRETTON-GRAM came next with Mrs. J. Laing.

With twelve Teas, one variety, Messrs. D. & W. CROFT came 1st with *Lurline*, but much dressed; Messrs. A. DICKSON & SONS, 2nd.

In the Amateurs' Division, the best twenty-four Roses came from Mr. W. BOYES, Derby.

With eighteen varieties, Mr. M. WHITTLE, of Leicester, was 1st; Rev. J. H. PEMBERTON and Mr. W. BOYES were placed equal 2nd.

Mr. WHITTLE was also 1st with twelve varieties, and the Rev. J. H. PEMBERTON 2nd.

CARNATIONS AND PLOUMES

Mr. R. C. CARTWRIGHT, King's Norton, followed up his successes last week at Birmingham by taking the 1st prize with twelve varieties of bizzaro and lake Carnations. Messrs. ANTIDALE & Co., Sheffield, were 2nd.

With twelve y-blow-ground Carnations, Mr. CARTWRIGHT was again 1st. Mr. A. R. BROWN was 2nd. Robert Hodgkiss and J. S. Healdyly were the best bizzaros, Gordon Lewis the best lake, Benbow and Cecelia the best silks.

With Twelve Picotees, Mr. CARTWRIGHT was again 1st. With twelve bunches of stove and greenhouse cut flowers, Mr. JOHN KELWORTH was 1st, and Mr. GEO. BROWN, Leicester, 2nd, the latter having the best twelve bunches.

Of hardy annuals, Mr. W. WRIGHT, Jun., Syston, had the best twelve fancy Pansies, while Mr. C. WESTON was 1st with twelve bunches of Violets.

The best bouquet for the hand came from Messrs. ANTIDALE & Co.

Baskets of flowers were delightful, a considerable space of tables being devoted to them. Show and fancy Dahlias and Cactus varieties were also staged, and they were good for the season.

Cut Begonias, double and single also, were very finely shown by Messrs. B. R. DAVIS & SONS, Yeovil, who took the 1st prizes in each class.

FRUIT

Twenty-two classes open to all were set apart for fruit, and in the collection of eight dishes, Mr. J. H. GOODBYE, The Gardens, Elvaston Castle, Derby, came in 1st with two bunches each of Black Hamburgh, Muscat Hamburgh, and Muscat of Alexandria Grapes; Barrington and Royal George Peaches, Elrige and Red Nipper Neectarines, and *Aloué*, 2nd. Mr. A. M. GOODBYE, Nottingham, addresses we may say, are somewhat imperfectly given at the Abbey Park show.

Mr. GOODBYE was also 1st in the class for eight dishes; Mr. J. READ, The Gardens, Brothly Park, came 2nd.

With four varieties of Grapes, two bunches of each, Mr. GOODBYE was again 1st, having in good character *Madresfield Court*, *Muscat Hamburgh*, *Great Muscat*, and *Muscat of Alexandria Grapes*. Mr. A. McCulloch was 2nd.

Mr. GOODBYE was an easy 1st with two bunches of well-finest black Hamburgh, and 1st for two bunches of *Muscat of Alexandria*, and for two bunches of any other black, having well-finest *Topas Marie*.

In the class for five bunches of white Grapes, Mr. GOODBYE, Nottingham, addresses we may stage Canon Hall Museum, was ruled out of the competition. Mr. READ came in 1st with an unnamed semi-berried Muscat.

The best dishes of Peaches came from Mr. NISBET, Derby Gardens; and Mr. S. COLE was 1st with a good dish of Neectarines. A few Melons were shown; Figs, too, were present. There were some good Cherries, and also waterberries. The best dish of dessert Apples was Beauty of Bath. Red, white, and black Currants were shown in their respective classes; and Tomatos included among the fruits were well represented.

VEGETABLES

Fourteen classes were given up to open-class vegetables, and they were shown in very fine character. Despite the drought, the development of vegetables has been most satisfactory, as far as evidence was afforded on this occasion. In the Cottagers' Division, in which vegetables could be shown only by those residing within four miles of the market-place, Leicester, the produce was highly favourable to the attention of growers.

Special prizes for collections and dishes of vegetables were offered by Messrs. HAINES & SONS, Leicester, in two divisions; by Mr. R. PRINGLE, seedman, Leicester, Messrs. YARDE & Co., seed growers, Northampton, Mr. JAMES WRIGHT, seedsmen, Leicester; and others.

NON-COMPETITIVE EXHIBITS

Miscellaneous exhibits included a very fine and effective group of plants from Messrs. VEITCH & SONS, Exotic Nurseries, Chelsea Cold Medal.

Gold Medals were also awarded to Messrs. B. S. WILLIAMS & SONS, Holloway, London, for a collection of foliage and flowering plants; to Mr. W. BENTLY, Leicester, for Roses; to Mr. ADOS PEREY, Winchester Hill, London, for a collection of cut flowers; to Messrs. HINDON BROS., Warwick, for a collection of Sweet Peas; to Mr. S. MORRHEAD, Swiss Nursery, Farnham, for Dahlias; to Mr. J. H. WATTS, nurseryman, Worcester, and to Mr. B. DEVEREAUX, nurseryman, Rabbiny, in each case, for cut flowers; to Mr. W. BOYES, Leicester, for plants and cut flowers; to Messrs. J. PEED & SONS, nurserymen, Lower Norwood, for plants, including *Gloxinias* and *Streptocarpus*; to Messrs. B. R. DAVIS & SONS, Yeovil, for a collection of Begonias; and to Messrs. W. CLIBURN & SONS, Altrincham, for a fine collection. And silver medals to Mr. W. E. PARTISON, for a collection of Violets; to Messrs. HARRISON, seed merchants, Leicester, for plants, Sweet Peas, &c.; to Mr. PRINGLE, seedsmen, Leicester, for cut flowers; to Messrs. JONES & SONS, Shrewsbury, for Sweet Peas; and to Mr. CHARLES HOLDEN, florist, Leicester, for floral decorations. A small Gold Medal was awarded to Mrs. HODGKINS, West Didsbury, Manchester, for skeleton leaves and flowers, and floral decorations.

MARLOW HORTICULTURAL.

August 7, 8.—The quiet and delightful riverside town of Marlow is *en fête* during the present week, and a portion of the attractions takes the form of a flower show. The exhibits themselves were of excellent quality, but keener competition is needed in the majority of the principal classes.

The group and plant section was more conspicuous for quality than for quantity. In the class for a group of miscellaneous plants arranged for effect in a space not exceeding 72 square feet, there were two exhibitors, of whom E. RILEY, Esq., gr., Mr. T. W. JORDAN, was easily 1st; Sir W. CLAYTON (gr. Mr. J. Sharpe), was 2nd. For fine foliage plants the above growers exchanged places.

T. O. WETHERED, Esq. (gr. Mr. M. PARSONS), won easily with three Ferns, having most creditable plants.

Mr. J. SHARPE was in great form with *Calladiums*, showing clean, fresh, well-coloured examples.

Mr. T. W. JORDAN showed three fine *Fuchsias* in one class, General Roberts, secured the prize for the best plant in the show. Mr. JORDAN was also 1st for six tuberos-rooted Begonias, four zonal Pelargoniums, and three Colons, staging creditably in each instance.

Taken as a whole, fruit was not particularly good. The value of the exhibits was minimised by the absence of the names of the exhibitors.

For a collection of six kinds, Mr. W. PARSONS was 1st. For two bunches Black Hamburgh, Mr. T. W. JORDAN just went in front of Mr. W. PARSONS, and won most of the other classes.

Mr. C. AMBERSON, Thames Bank, was easily 1st for six Peaches, and for a collection of four dishes of hardy fruits, distinct. Kitchen Apples were good, but dessert Apples and Pears were not up to the mark.

Mr. T. W. JORDAN was very successful in the vegetable classes.

NON-COMPETITIVE EXHIBITS.

There were several exhibits "not for competition," by far the finest being contributed by R. W. HUDSON, Esq., Bamesfield, Great Marlow (gr. Mr. Jas. Gibson). There were really two groups, one being of vegetables and the other of miscellaneous foliage and flowering plants.

Mr. CHARLES TURNER, Slough, sent Sweet Peas, and hardy herbaceous flowers; Mr. E. F. STUBB, Maidenhead, herbaceous flowers and *Cactus Dahlias*; and W. and R. OWEN, Maidenhead, Camias, &c.

HANDBOOK OF THE DESTRUCTIVE INSECTS OF VICTORIA.

—This includes notes on the methods to be adopted to check and extirpate the pests; and is prepared by order of the Victorian Department of Agriculture by C. FRESCU, Government entomologist. The volume before us is Part III. of a publication that has already been of great value to agriculturists. The explanations are practical rather than intricately scientific, and aided by clear and good coloured plates, should help every grower to determine and to cope with his insect enemies. Plates and descriptions of the most valuable (Victorian) insect-destroying birds are also given, and an appendix includes engravings of new designs in spraying-apparatus and other appliances of use against insect pests.

MARKETS.

COVENT GARDEN, AUGUST 8.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES. s.d. s.d.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES. s.d. s.d.

FRUIT.—AVERAGE WHOLESALE PRICES. s.d. s.d.

VEGETABLES.—AVERAGE WHOLESALE PRICES. s.d. s.d.

REMARKS. Some Raspberries on Saturday last in boxes at 12s. per cent. There are now out on benches at 2s. 6d. to 3s. Limbs in boxes at 5s. Melon Pans in boxes of 24 or 25, at 16d. to 18d. California Plants at 6s. per case. Aubergines 1s. 6d. dozen. Gooseberries and Raspberries are nearly over.

POTATOS.

St. Malo, Charbonn, Bedford, and others, 10s. to 12s. John Bath, 3s. & 3d., Wellington Street, Covent Garden.

FRUITS AND VEGETABLES.

GLASGOW: Aug. 7.—The following are the averages of the prices recorded since our last report.—Raspberries, 2 1/2 to 3 1/2 per lb.; cherries, English, 3d. to 4d. do.; Gooseberries, Warringtons, 2s. to 3s. 6d. per half sieve, do. Sulphur, 2s. 6d. to 3s. 6d. do.; Irish and Scotch Warringtons, 12s. per cwt.; Apricots, 5s. to 6s. per half sieve; Apples, Lisbon, 8s. to 10s. per case; Green Gages, French, 5s. to 7s. per doz.; Italian, 3s. 6d. to 4s. per basket; Bananas, Canary, 9s. to 12s. per crate; do. Jamaica, 8s. to 11s. do.; oranges, English, 1s. to 1s. 3d. per lb.; do. Dutch, ground, 1s. to 1s. 6d.; do. black, 7s. to 9s. per barrel; do. Genesee, 10s. to 1s. 1/2 per lb.; do. new, 1s. 3d. to 2s. 3d. do.; Currants, red, 1 1/2 to 2 1/2 do.; do. black, 3 1/2 to 4 1/2 do.; do. Scotch, red and white, 2 1/2 do.; do. black, 3 1/2 do.; do. Pears, Dutch, 2s. 3d. per basket; 2s. per sieve and 1s. to 1s. 6d. per bushel; Melons, Valennois, 5s. to 7s. per case; Amos, 5s. to 6s. per case; Tomatoes, English and Genesee, 4d. to 5d. per lb.; do. Scotch, 5d. to 7d. do.; Cucumbers, 2s. to 4s. per dozen; Mushrooms, 1s. to 1s. 3d. per lb.

LIVERPOOL: August 7.—Wholesale Vegetable Market.—Potatoes, per cwt.: Early Regents, 3s. 9d. to 4s. 9d.; Kidneys, 4s. 6d. to 5s. 9d.; Up-to-Date, 4s. 9d. to 6s. 3d.; Turnips, 10d. to 1s. per dozen bunches; Swedes, 3s. 9d. to 4s. 9d. per cwt.; Carrots, 8s. to 10s. per dozen bunches; Onions, foreign, 2s. to 3s. 6d. per cwt.; Parsley, 10d. to 1s. per dozen bunches; Lettuces, 1d. to 1 1/2d. per dozen; Cucumbers, 1s. 3d. to 1s. 6d. do.; Cauliflowers, 10d. to 1s. 6d. do.; Cabbages, 6d. to 1s. do.; Peas, 6s. 6d. to 7s. per hamper; Beans, 2s. 9d. to 3s. 6d. do.; do. Kidney, 1s. 3d. to 1s. 6d. per peck; Scarlet Runners, 1s. 3d. to 1s. 6d. do.; St. Johns, 1s. 3d. to 1s. 6d. do.; Grapes, English, 1s. 6d. to 1s. 9d. per lb.; foreign, 4d. to 5s. 6d.; Pines, English, 2s. each; Apples, 3d. to 6d. per lb.; Pears, 3d. to 6d. do.; Tomatoes, 2d. to 6d. do.; Currants, black, 5d. to 6d. do.; Peas, 1s. 4d. per peck; Cucumbers, 3d. to 4d. each; Mushrooms, 1s. per lb.; Brakenhead, Potatoes, 1s. 3d. to 1s. 6d. per peck; Peas, 1s. 3d. to 1s. 6d. do.; Cucumbers, 2d. to 4d. each; Cherries, 3d. to 6d. per lb.; Currants, black, 4d. do., red, 1d. and 5d. do.; Apricots, 1s. per dozen; Gooseberries, 2d. to 3d. per lb.; Oranges, English, 2s. 6d. do.; foreign, 4d. to 5d. do.; Mushrooms, 1s. to 1 1/2d. per lb.; Peaches, 3d. to 4d. each.

CORN.

AVERAGE PRICES OF BRITISH CORN per imperial qtr. for the week ending Aug. 3, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return.

Table with columns: Description, 1900, 1901, Difference

injury from ingress of air, but in practice it is not found necessary to bury fruits that have been bottled and boiled carefully. They will keep perfectly good in ordinary conditions for a year or longer period.

CHRYSANTHEMUM LEAF-MINER: J. K. The grub of a fly. There is no remedy but picking off the leaves and burning them.

CELEBRATE A SALAD OR VEGETABLE: W. S. The chairman of the committee of a Floral and Horticultural Society says that pending an answer from us as to whether the Cucumber is a "salad" or a "vegetable," the prizes in a particular competition that took place on August 5 are being held over. The question, fortunately, is a very easy one. The Cucumber is undoubtedly a fruit just as much so as is a Melon. But the Cucumber differs widely from the Melon in the uses to which it is generally put; albeit some persons eat salt to their Melons rather than sugar, and say that the flavour of the fruit is thereby rendered more piquant. The Cucumber is classed in gardens as a "vegetable," but for culinary purposes it is commonly used as a salad. We must now turn to the schedule, and this reads, "Collection of nine distinct varieties of vegetables (salads excluded)," and this absolutely excludes any vegetable most commonly used as a salad.

GRAPES DISEASED: C. B. The Grapes are badly "spotted," from the presence of a fungus. Burn all the affected berries, and ask us what to do next spring. It is too late now.

INSECTS: P. W. Hooley. The leucist is a male Copiophora cornuta. It is a species occasionally met with in this country among freshly imported Orchids. You may possibly find others, but it has not been known to survive the same colour as the males, but have rudimentary wings, and the body is furnished with a very long saddle-like ovipositor (see figs. 27, 28, p. 124). You may possibly find others, but it has not been known to survive the same colour as the males, but have rudimentary wings, and the body is furnished with a very long saddle-like ovipositor (see figs. 27, 28, p. 124). We regret the insect was completely smashed during transit, and therefore quite undeterminable. — J. Worship. Thanks for specimens of the dipterous larvae. We will give the name should we be successful in rearing the perfect insect.

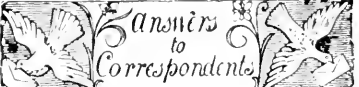
IVY PARASITE ON: T. R. A Dodder, Cuscuta epithymum. Cut it away, and burn it at once before the seeds ripen. We do not think it will do much mischief if you keep it in check; and the plant is interesting.

LILY: Madonna. We generally see this do best when fairly exposed to the sun, but it will also do in the shade.

SYMPLICARIS PERDIS: Veritas. Found in N. America, N.E. Asia and Japan. Figured in the Botanical Magazine, 321. It is known as the Meadow or Skunk Cabbage, and belongs to the same Natural Order as does the Arum. The plant is hardly, and being an aquatic perennial, growing about 1 foot high, should be planted in a wet situation and in peaty soil. The flower-spines, produced in May, are purple and green, or greenish-yellow.

MARKET ENQUIRIES: H. L. H. A sieve is half a bushel, it should contain 24 lb. of fruit, or 28 lb. of Potatoes. Bunches of Carrots contain from twelve to thirty roots, according to the district from whence they come. In some cases they are tied up in fan-shaped bunches, carefully selected and "graded," and these fetch the highest prices; in others less care in selection is exercised, and the "chumps," or inferior roots, are sold for what they are worth for horse or cattle food.

MUSHROOMS: D. J. The botanists have shown how these can be grown without manure. They have done their part. It is now for the practical man to turn the knowledge to account. At present the matter has not advanced beyond the stage of a laboratory experiment, but there is no reason why some enterprising experimentalist should not turn it to commercial account. He would, of course, have to reckon on considerable loss in the first instance.



APRICOTS: R. J. H. We cannot offer an opinion unless fruits were sent for examination. You might cut open some of them and see if they have formed stones perfectly.

BOOKS: L. B. Ferns and Fern Culture. By J. Birkenhead, Sale, near Manchester. Price One shilling.—C. B. Boulger's British Trees (Cassell & Co.).

BOTTLING FRUITS: W. Young. Select whole, ripe fruits, and put them into bottles as closely as possible, leaving very little air-space between them. Fill with water up to the shoulder of each bottle. Then put the bottles into a flat copper or bath containing cold water, sufficiently deep only to cover the bottles to the shoulder. Boil for twenty-five minutes in the case of Plums, and twenty minutes in that of Morello Cherries. The stoppers should be put on the bottles whilst the fruits are still boiling, and this is an exceedingly important detail. There are various patent stoppers to be had, and an excellent one was described on p. 102 in our last issue. We may add, that some put a tablespoonful of sugar to each bottle of fruit before applying the water. Theoretically, preserved fruits, and everything else, will keep best buried in earth, there being less fluctuation in the temperature, and less liability of



FIG. 37.—COPTOPHORA CORNUTA (MALE).
(SEE P. 123.)

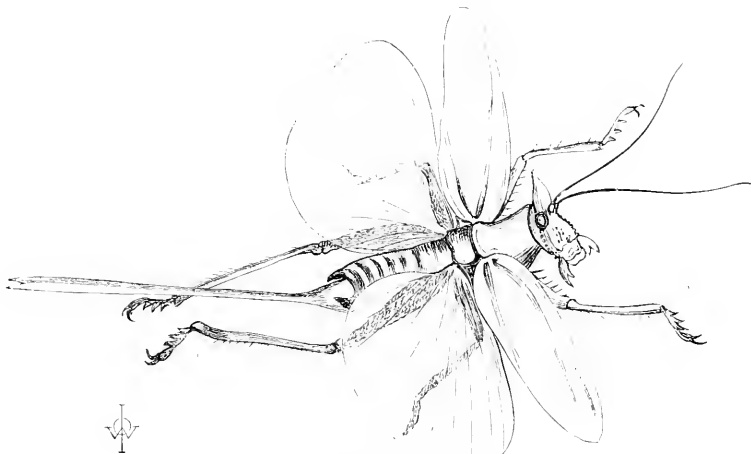


FIG. 38.—COPTOPHORA CORNUTA (FEMALE).
(SEE P. 123.)

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number:—W. S. 1, Juniperus virginiana; 2, Cupressus, perhaps Goveniana or macrocarpa; 3, Juniperus virginiana; 1, Cupressus, Benthami probably; 5, J. virginiana var. Schottii; 6, J. virginiana.—H. L. H., Stanhopea fragrans, native of Mexico; a very fine specimen.—P. W., Mandelburg, Cattleya venosa, a natural hybrid between C. Loddigesii Barrisoniana and C. Forbesii.—Arvicola, Catalpa bignonioides, Dendrobium bathousianum, D. draconis (bathousian).—R. E., Bristol, Cattleya granulosa, near to the variety Dubuyssoniana.—F. E. A. 1, Pteris crenata (chilensis); 2, Blechnum polypodoides; 3, Polypodium aureum; 4, Polystichum aculeatum; 5, Notochloa chrysophylla; 6, Athyria n. filix-femina Frizelliae.—C. A. B. 1,

Sonchecio Jacoinea; 2, Silphium laciniatum; 3, Lysimachia vulgaris.—J. L., Ashbourne, Hedyosarum coronarium, called French Honey-suckle, because it is not a Honey-suckle.—Fino, 1, Nephrolepis davallifolios Irrenus; 2, Thunia alba; 3, Carex variegata; 4, Dietyogramma japonica variegata; 5, Sempervivum arachnoideum; 6, Datura Stramonium.—J. B., 1, Tabernaemontana coronaria, fl.-pl. (scind in flower); 2, Cissus discolor; 3, Alceaia macrophylla variegata; 4, Maranta picta; 5, probably a Cypripedium (scind in flower); 6, Maranta Veitchi. The tickets were wet, and not easy to decipher.—Aphor. A Picotee, probably Salix fragilis, impossible to say with certainty from a leaf.—F. B., Cotoneaster, probably C. mummularifolia.—White Wooden Box with Name, 1, Viburnum Opulus; 2, Tannus communis; 3, Glaucium luteum (Norm Poppy); 4, Agrostis-

temna coronaria; 5, Thymus serpyllum var.; 6, Acrena; 7, Cynanchum Vincetoxicum; 8, Epilobium lanceolatum album.—H. K. A form of the common Thyme, T. vulgaris.—Sweet Pot., 1, Centaurea ruthenica; 2, Cimicifuga racemosa; 3, Centaurea glastifolia; 4, Eryngium alpinum; 5, Lychnis chalcidonica; 6, Ononis arvensis alba.—Abington, Melilotus officinalis.

ROOTING LAURELS: Gosfield. The common Laurel or Sweet Bay will root moderately easy if cuttings be taken 3 to 4 inches long during next month, and inserted in a sandy soil under hand-lights in comparative shade. Perhaps you have not afforded the cuttings the protection of a hand-light, and have failed for this reason. You might also increase the plants by layering some shoots during next month or in October.

SOUVENIR DE LA MALMAISON CARNATIONS: Malmaison. An expert in the cultivation of these plants replies to your queries as follows:—"Repeat the plants at once into 8-inch and 9-inch pots, using a compost of good turfy-loam three parts, and leaf-soil, peat, lime-rubble, and sand, one part. Should the loam be of a retentive nature, then a few pieces of charcoal may also be incorporated with the whole. A small quantity of bones may be used, but only given in proportion as the loam is rich or poor in plant food. Liberal drainage must be provided, and the soil also will require to be firmly pressed (not rammed) home around the sides of the root-mass. Assuming that the growths have not been thinned out, no time should be lost in selecting the very best placed and strongest. The number to be left must be regulated by the strength of the individual plant; from six to twelve growths may be taken as a guide, though I have flowered them in quantity with as many as fifteen; in the absence of any information as to the strength of your plants, I give the foregoing in the belief that the plants are well grown. Place a neat stick to each growth as the work proceeds, allowing every one plenty of room for the admission of light and air. Water must be sparingly given, and the plants should be exposed to light and air in a well ventilated house. J. F. M."

TOMATO DISEASE: Tyro. If you read your Gardeners' Chronicle you would know that it has been repeatedly figured and described. Burn all the affected plants, as it is very infectious. On no account sow seed from affected fruits.

WEEDS ON LAWN: W. H. N. The most effectual method by which to eradicate Plantain and Dandelion from lawns is to dig them out, and obtain every bit of root that is possible. The preparation known as lawn sand, procurable from the trade, will keep them under for a time, but it is doubtful if it will kill in all cases the bottom half of the roots, and failing this the plants will produce three or four heads each in place of one. Sulphate of ammonia is also useful by improving the grass and thereby smothering the weeds.

COMMUNICATIONS RECEIVED.—W. E. G.—C. W. H. G.—H. T. H.—MAX Lechtin—N. L. Britton, New York.—J. M.—S. R.—S. W. F.—R. P.—E. C.—A. B. P.—Nico.—D. T.—W. E. H.—K. A. S.—D. R. W. Vime—Hyacinth.—A. Long Mps.—W. Rocks—W. N. H.—W. A. C.—W. C. & Son.—J. W.—H. T. M.—Wild Rose—A. P.—C. H. P.—E. C. J. O'B.—W. B. & Son.—H. C. & Sons.—R. N.—H. Y. S.—Subscriber.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

BEEN TREBLED.

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

(For Weather, see p. viii.)



GROUP OF HEMANTHUS, SHOWN BY M. LINDEN AT THE TEMPLE SHOW.

THE
Gardeners' Chronicle

No. 764.—SATURDAY, AUG. 17, 1901.

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"NATURE-STUDY."

WE take the following extracts from an address to the schoolmasters attending the vacation course at the Harper Adams Agricultural College, Newport, by the Principal, Mr. P. Bodworth Foulkes, B.Sc., F.F.S., on August 1. To arouse in intelligent interest in the surroundings of everyday country life, is not only to sweeten existence, but also to put within reach the opportunities for material advancement.

In the early nineties of last century, the subject of Nature-study had commenced to arouse the attention of teachers all over the United States of America. The movement was started by the Universities, and very soon grew to large proportions, in fact, one University, in 1899, was mailing over 1,200 letters a week in connection with this branch of its work alone. The work was done principally by correspondence and by the publication of leaflets mainly for the use of teachers. These leaflets contained notes of instruction, explanation and advice. At the American Educational Exhibition in Manchester, in February last, some of the results, as well as the methods of teaching Nature-study, formed a very important section of a most interesting exhibition.

Germany, too, provides us with an example, which we would do well to copy. One chief feature, perhaps, of all the German education work may be said to be the numerous and colorful studies of sciences. This is particularly the

case in their High Schools and Colleges, where I have seen collections that would do credit to any English museum.

"In an American description of Nature-study, the purpose of the work was stated to be 'to improve agriculture.' 'We believe,' this description ran, 'that the most fundamental thing we can do is to give a new enthusiasm and a new point of view to the coming farmer. Nor do we hold that the coming farmer alone should be reached in order that farming be improved. We want to do something to elevate the tone of country living, and this can be done only when a general public sentiment is awakened. While we desire to reach all the schools with the purpose of improving country life, we do not believe it to be wise to make the teaching of technical agriculture compulsory in any school, not even in the rural districts. To force the teaching of agriculture is to make it perfunctory, and of no avail. The teacher must be trained. Public sentiment must be awakened. A desire must be created. It is a question whether any technical or professional work should be introduced into the elementary schools; but it is always advisable to awaken the pupil's interest in the things with which he lives.'"

"The subject of Nature-study is one which is eminently suitable for all children, and I would not by any means confine it entirely to country schools.

"The primary object of all Nature-teaching is to encourage and promote in children the power of observation, and such observation should be encouraged so that when the school days are over the child is in full and complete sympathy with, and takes an intelligent interest in the pursuits and occupations which are open to dwellers in the country. It is, in other words, the rational training of the child's intelligence. Every child is naturally inquisitive, and such inquisitiveness should be encouraged, developed, and trained into a habit of enquiry and research, so that the simple phenomena of Nature may be wondered at, spoken of, and understood.

"Beginning with the youngest pupil, the simplest objects must be taken in such a way that the child does not think that he is learning a lesson. Once having interested the child, a succession of work may be arranged which will lead upwards, and finally, in the case of older students, lead to a useful knowledge of the work which is to be the means of livelihood in subsequent years. This may be brought about by the teacher taking those simple subjects which are to hand at the different times of the year, and such subjects should be treated in the simplest and most elementary manner. It is not desirable to lay before a child such definite facts as names, and dates, or, at any rate, to expect a child to learn by heart such names or dates, but to make the object of such interest that, when subsequently the child's eye comes across a similar object, it will observe, and lead to nothing, perhaps, its surroundings or its variations from the object explained in the school-room.

"For this reason, Nature-teaching should, as far as possible, be always accompanied by objects, and, whenever a sufficient number of objects are attainable, it is beneficial that each child should handle these for himself. The success of the teaching will depend upon the attractiveness of the subject. The greater the skill of the teacher in this direction, the greater the benefit to the pupil. Fortunately, the subject is one which does not require the expenditure of large sums of money upon apparatus and diagrams, for no subject in the school curriculum lends itself so well or as so

many means of demonstration. The variety of the subject is again a great advantage to the teacher, and such lessons may be taken as can be illustrated, or such objects chosen as may be watched and handled by each pupil.

"There are very many simple pieces of apparatus which can be made without expense, and which will materially assist the teacher to explain the processes of Nature. It is not necessary to have a complete chemical or biological laboratory in order to show the elementary principles of matter or the germination of some common seeds. Nor is it necessary to have a complete entomological collection when discussing the cabbage-butterfly or the common wire-worm. A great deal may further be done by the pupils copying these simple experiments either at home or in school, when time permits.

"We may define Nature-study as being an acquiring of sympathy with Nature, or, in other words, sympathy with what exists. Nature Study in the school is the teaching of the youth to see and to know the thing nearest at hand. It is not a definite exact knowledge, and some authorities accuse Nature-study as being a failure because it does not teach definite facts, and does not teach strict method and accuracy. Accuracy and method are both highly desirable and absolutely necessary features, and while accuracy is a prime requisite in Nature-study, it is an accurate searching for truth that is required rather than such an accuracy of method as we find in a subject like mathematics.

"The essentials in Nature-study may be said to be:—

"First: The keen love of Nature. This is, to a large extent, instinctive; but it may be cultivated, and, if absent, a personal interest may be aroused in the individual.

"Secondly: Observation, which should be direct, discriminating, and accurate. The absence of this essential may ruin the whole work, and yet, if overdone, may cause the subject to degenerate into a dry, uninteresting lesson.

"The third essential is a desire to know more than is seen. This essential follows the others; it is the secret of the whole of the work, and, unlike all other school work, it comes of itself.

"Fourthly: Nature-study must be spontaneous. To make it a lesson taken from books robs it of all its interest. It cannot be made a subject for examination, for there again the life of the subject would be done away with.

"We live in an age of specialists, and the temptation is, particularly in the scientific world, to put aside all other branches and to go deeply into one small branch, which appears the most attractive. The old type of naturalist is, now-a-days, hardly ever to be met with. This is a state of things which, in some ways, is beneficial to the country at large, as it enables the teacher to go deeper and to allow a more thorough study to be made. But, at the same time, there is not the general interest taken in Nature. Perhaps of all real students of Nature, the 'keeper' is the most thorough; but here, we generally find, as specialising, the knowledge is confined to the animals which it is his duty to observe. Richard Jefferies—an author who was a true lover of nature—brings this very clearly out in describing, in some of his works, a very typical form of gamekeeper. Personally, I have been surprised at the wonderful power of observation which many keepers possess. Such power of observation is, as a rule, to these men a second nature. Take again, as an example of the necessity for the power of observation, the case of the shepherd. Here, acute power of observation is an absolute

necessity, for it is a matter of life or death to the sheep, and often to the shepherds themselves in the case of flocks on the mountain pastures. The best shepherds are generally those whose fathers and grandfathers have been shepherds before them: the power of observation runs, so to speak, in the blood. Their knowledge of weather is often remarkable, and frequently more reliable than a barometer.

(To be continued.)

LOGAN GARDENS, WIGTONSHIRE.

Mrs. McDONALD, of Logan House, in this picturesque parish, is one of the most ardent amateur horticulturists within the range of my acquaintance. Through the kindness of this gifted lady, I have many opportunities of visiting those beautiful gardens and grounds, which she loves so greatly and so effectively superintends. They are at present extremely attractive—a series of floral pictures of the most artistic description.

Mrs. McDonald is a great lover and cultivator of Roses, and all the finest varieties of Hybrid Perpetuals, Teas, and Hybrid Teas, also such superb climbers as Turner's Crimson Rambler, Rêve d'Or, Cranioise Supérieure (which flowers profusely from June to September), the Ayrshire Ramblers, so prolific of their floral affluence; Gloire de Dijon, and Bouquet d'Or, luxuriate there. An exquisite climbing Rose, which the Lady of Logan should add to her already extensive collection, is the supremely lovely Claire Jacquier, whose opening buds, more refined in their aspect than those of William Allan Richardson, are strikingly contrasted with the expanded flowers. It is one of the greatest ornaments of my own garden this year.

Mrs. McDonald's favourite Roses are the Teas and their beautiful hybrids, especially such varieties as Marie Van Houtte, Papa Gontier, Madame Lambert, Medea (undoubtedly the grandest of lemon-coloured Roses raised by Mr. Wm. Paul, of Waltham Cross), Madame de Watteville (which I find very unreliable), Clara Watson (which should be grown more extensively in Logan Gardens), Madame Perrot Ducher, the nobly-endowed and very fragrant Viscountess Folkestone, and Gloire Lyonnaise.

Almost rivalling the Roses are the magnificent Spiræas, especially *S. gigantea*, which in these gardens is worthy of its name; *S. japonica*, *S. palmata*, and *S. Aruncus*, with its fan-gleaming, creamy-white, feathery plumes. Many beautiful forms of the graceful Clematis adorn the garden walls, they are also made radiant with the innumerable scarlet pictures created, as if through some artistic instinct, by *Tropæolum speciosum*, which also flowers picturesquely amid the branches of venerable trees with a charming effect.

In the centre of Logan gardens is a shady circular enclosure, sacred to the memory of the late Mr. McDonald and his sister, Mrs. Patrick Stewart, which is a garden in itself, filled with Wallflowers, York and Lancaster and Provence Roses, and other fragrant old-world flowers, greatly cherished by the present proprietor, Mr. Kenneth McDonald, for the sake of those who used to tend the "flowers of remembrance" so lovingly there. On either side of these the quite modern *Nemesia* flowering most abundantly, with many fascinating and tenderly tinted forms, deepens the interest of this tranquil scene.

Mrs. McDonald has for many years been an earnest cultivator of Oriental Lilies, of which the most successful have been the great Himalayan *Lilium giganteum*, which here reaches a height of fully 10 feet, and blooms magni-

ficently; *Lilium auratum platyphyllum*, which also grows impressively; *Lilium Humboldtii*, *L. Szovitzianum*, which should be assigned an opener and sunnier situation, that it may have an opportunity of revealing its powers; *L. Kramerii*, *rubellum*, *Burbankii*, *speciosum*, *dalmaticum*, *candidum* (with splendid effect among the Roses), *davuricum*, and other species, are extensively cultivated. The flowering of new varieties recently brought from islands in the South Pacific Ocean, outwardly resembling *Lilium longiflorum*, but doubtless distinct, is awaited with great interest.

To this fine collection of Lilies might be added *Lilium Washingtonianum*, a very beautiful and most fragrant native of California, which invariably flowers on the confines of July. *David R. Williamson*.

BRODIAEA CROCEA (L. WATS.).

This is the first time this pretty little species has been illustrated (fig. 39). It has a small, ovoid, truncated bulb, linear leaves, a

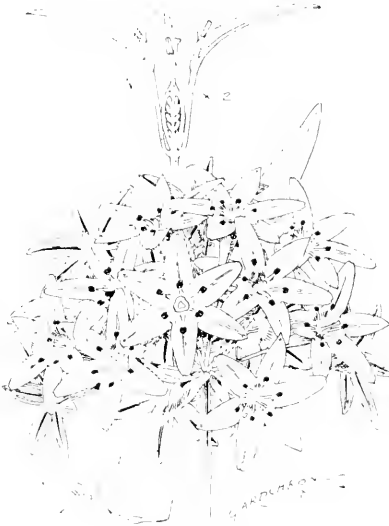


FIG. 39.—BRODIAEA CROCEA.

slender naked peduncle a foot long, and an umbel of 6 to 15 inches in height; yellow flowers, with a funnel-shaped tube shorter than the oblong lobes. The lobes are keeled with green, and the filaments are flattened and very short, the two rows of three each being unequal in length. It is a native of the mountains of the north of California, and was first described by Professor Wood in 1868 under the name of *Southeria crocea*. It has also been called *Milla crocea* and *Triteleia crocea*. *J. G. Baker*. [Flowers were described lately by Messrs. Wallace, of Colchester.]

ORCHID NOTES AND GLEANINGS.

RHYNCHOSTYLIS CELESTIS.

A good specimen of a fine variety of this charming blue-flowered Orchid has been in bloom for some time in the collection of George C. Raphael, Esq., Castle Hill, Englefield Green (gr. Mr. H. Brown). The plant, which is more often seen in gardens under the name of *Saccobolium celeste*, is stated by the collector Robinson to have been found "growing upon isolated

trees in the Rice-fields of Siam, these trees being charred stumps which had survived the fires used in clearing the ground." Doubtless they are to be found in more happy situations also, but importation of the plant is seldom made, and generally in small quantities only, consequently it is not often met with in gardens. The variety at Castle Hill has upright spikes of many pretty sky-blue flowers, the comparatively large labellum being violet-blue. *Vanda cerulea*, *V. cornu-sensum*, and other *Vandas*, *Saccoboliums*, and *Arides* thrive well at Castle Hill, and bloom regularly. Some interesting and showy species have lately been received from Mr. Oscar Raphael (Mr. G. C. Raphael's son), who is an enthusiastic traveller in unfrequented places, especially in India and to the confines of Tibet. Some noble specimens of *Dendrobium nobile* and other *Dendrobiums* received from these regions are flowering well, and will in due time give a fine show of flowers.

CYPRIPEDIUM DORIS.

Raised and first flowered by Norman C. Cookson, Esq., in 1890, this fine hybrid between *C. venustum* and *C. Stonei*, may almost be regarded as old, but in point of beauty it will compare favourably with many of the newer arrivals. The broad, dark green, slightly mottled leaves constitute it a sturdy-looking plant; and its tall inflorescences of large flowers, with some of the aspect of those of *C. Morganii*, render it highly ornamental. When the earlier plants flowered out of the batch raised, the influence of the *C. Stonei* parent was not strongly pronounced, but in the strong specimen now flowering with George C. Raphael, Esq., Castle Hill, Englefield Green, the features of that species are the more prominent. The large dorsal sepal is shaped much like that of *C. Stonei*, but is broader, yellowish-white, with numerous green lines following the veining; the lower sepals are similar but smaller; the showy, arching petals yellowish-white, with numerous large chocolate-purple spots, except at the base and apex; lip large, light purplish-brown. With it in flower is another of Mr. Cookson's hybrids, *C. × Bryan* (*philippinense* × *Argus*), also very distinct; a plant of a very fine form of *C. Curtisii*, with much more white than usual in the flowers; *C. superbium*, and some hybrids, among which the Castle Hill form of *Selenipedium stenophyllum* (*Schlimii* × *carolinum*) is an elegant though not large-flowered variety with white flowers tinted with rose, and beautifully spotted on the inside of the lip and side-lobes with purple.

CHRYSANTHEMUM CULTURE.

"TAKING" THE BUDS.—If there is one detail in the cultivation of large Chrysanthemum blooms that is of more importance than any other, it is that of "taking" or "choosing" the buds to produce our flowers. Experience with the different varieties will only thoroughly teach beginners in their cultivation in various localities the proper time to do this. If the buds are not selected at the best time for each variety, it is useless to expect flowers of first-class quality. It is not that upon a particular day of the month all buds must be "taken," but that the state of each individual plant must be considered when the wish-for-bud appears. As a general rule, what is known as the crown bud, is the one selected for producing large blooms, but in some instances this particular bud will not produce the best results, and the terminal one a month later should be chosen.

As a general rule, plants which are grown to produce large blooms, show several buds

during the season of growth. What is known as the first break is formed from the middle of April to the same time in May, and sometimes even later than that; assuming, of course, that the plants are allowed to grow away uninterruptedly from the cutting stage until this same first break is formed, which is caused by the natural tendency of the plant to form a flower-bud in the point of growth.

This bud is removed, and the shoots limited to three, as near to the point where the bud was produced as possible. These same selected shoots grow rapidly away, and in time produce each a bud which is termed a "crown" bud. When this bud shows at the correct time for a

are loose and flabby, more like inverted saucers than globe-shaped, which many varieties ought to be. They cover space enough, but are devoid of depth and solidity—the two most essential points in a good flower.

In removing the shoots which cluster around the bud, great care should be used, or an accident may easily occur; but the operation should be carried out directly it can be determined that the bud is perfect in form. The best time for this operation is in the early morning, or in the evening, when the dew is upon the plants; the shoots at that time are quite brittle. If the stem is held securely in the left hand, and the young growths

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See *Tables, ante*, pp. 88—91.)

(Continued from p. 126.)

3. ENGLAND, E.

ESSEX.—Taken on the whole, the crop of outdoor fruit is light; but this is not to be wondered at, seeing the immense crops that were secured from the trees last year. However, small trees in the nursery of the following varieties of Apples are carrying nice crops of clean though small fruit:—Worcester Pearmain, Beauty of Bath, Old Nonpareil, Quarrenden, King of the Pippins, Frogmore Prolific, and Miller's Seedling. *H. W. Ward, Lime House, Rayleigh.*

LINCOLNSHIRE.—The fruit crop is an average one with the exception of Pears and Plums. Plums are much infested with black and white flies. Apples appeared at first to be plentiful, but owing to the drought many have fallen. Small fruits are abundant. Strawberries have never been so good with us before; quality and quantity being excellent. *John Rowlands, Manor Gardens, Bardney.*

— Apples, Pears, Plums, Cherries, and Apricots, showed a splendid display of bloom, but the May frosts and subsequent drought have been exceedingly injurious. *J. D. Coward, Haverholme Gardens, Skefford.*

CAMBRIDGESHIRE.—The poor fruit crops here are the result of a hail-storm that occurred on May 29. *W. Backham, Dalham Hall Gardens, Newmarket.*

NORFOLK. Before returning this report, I have visited several other places in the neighbourhood, and find the fruit crop of 1901 generally very unsatisfactory, with the exception of Strawberries, which have been in most cases a very good crop. Apples, Pears, and Plums are very poor. This condition I believe to be due entirely to overcropping last season, as the weather in spring was favourable for the setting of what bloom there was. *E. Parstow, Shadwell Court Gardens, Thetford.*

— Apple-trees are looking very healthy, but the crop is a poor one, though some trees are bearing freely. Cherries and Apricots are the best crops of the year. *Wm. Alban, Gindon Park Gardens, Norwich.*

SUFFOLK. After the heavy crop of Apples last season, and the consequent weakening of many trees, one can hardly be surprised at seeing so many trees destitute of fruit this season. Pears and Plums, too, are short crops. Cherries were plentiful until the fruits began to colour, but the irritation and loss to growers through the depredations of birds has been very great this season. Peaches and Nectarines on open walls are good crops. Apricots not so plentiful. Among small fruits, Gooseberries have been a heavy crop; Black Currants not so plentiful; Strawberries abundant and good. *J. Wallis, Orwell Park Gardens, Ipswich.*

— In this district the Apple crop is a failure. This is not owing to climatic changes during the blooming period, but to the entire absence of blossom. Pears are an average crop, and promise to be good in quality. The same remarks also apply to Peaches, Apricots, Plums, and Cherries. Strawberries were a heavy crop and remarkably good. Other small fruits are abundant. All fruit-trees and bushes are making good growths, and are fairly clean. *H. Fisher, Flitton Hall Gardens, Bungay.*

1. MIDLAND COUNTIES.

BEDFORDSHIRE.—Apples in this district are a complete failure, and small fruits have suffered



FIG. 19. YELLOW GOOSEBERRY "CORHAM."

Recommended an Award of Merit when shown at a Meeting of the Royal Horticultural Society, on July 30. From Mr. T. K. Chickney, Cobham Hall Gardens, Gravesend. (See *Gardeners' Chronicle*, August 3, p. 102.)

variety, and is "taken," then all other things considered, it will develop into a perfect flower. If it were possible to name a day as the most suitable for all varieties, but it is not, then I should name the 21th of August; still, buds formed about that date invariably develop good blossoms.

It will be safe practice for those persons who have not had previous experience, to "take" the buds of all varieties that form after these notes appear, or have just previously formed; as to remove these would not allow time to develop another growth, and give another bud in time to produce full-sized blooms. The objection to buds formed too early is that the blooms do not come "kind," as it were; the flowers are coarse in petal, which much oftener reflex than incurve in the case of incurved varieties. The flowers then

which are intended for removal be bent suddenly down, one at a time, they snap off. After a little practice, this method of taking off superfluous shoots is more expeditious than cutting them off with a knife; but if the operation is effected during the middle of the day, when hot and dry, the shoots are quite tough, and the risk of damaging the flower-bud is much increased.

When the growths have been removed, the whole energy of the plant will be concentrated to the development of the flower-buds. The inexperienced cultivator errs in allowing the shoots to remain too long before removing them; all this time they are extracting nutriment from the plant which ought to be centred in the swelling of the flower-buds as rapidly and as evenly as possible. *E. Molyneux.*

from the prolonged drought. The rainfall here from April 15 up till now (third week in July) has been only 2.11 inches. *H. Nimmo, Cranfield Court Gardens, Woburn.*

— The fruit crops in the gardens here give every promise of a fair average crop, and all small fruits, with the exception of Black Currants, are over an average crop; Gooseberries in particular, which are one of the finest crops this season I remember to have seen. *Geo. Mackinlay, The Gardens, West Park.*

— The season has been an exceedingly unfavourable one, yet we have here an abundance of fruit generally, though the prolonged drought has affected its commercial value very adversely. Plums are a heavy crop on many varieties; Victorias, for instance, are loaded to such an extent that we have to prop up the branches. Rivers' Early Prolific, Monarch, Czar, Prince Engelbert, and Demiston's Superb, are similarly well cropped; as also are Damsons of some varieties. Apples are more irregular, but Potts' Seedling, Duchess of Oldenburg, White Transparent, King of the Pippins, Ecklinville, Lane's Prince Albert, and several others are well cropped. Pears are bearing fairly well on the higher ground, but these and the Apples are under-sized. Gooseberries have been most plentiful, but Red Currants, Strawberries, and Raspberries have suffered severely from the effects of the drought. Black Currants have been abundant in some parts of the county, for instance, at Eaton Bray one grower alone has sold 16 tons from about 6 acres of land, the fruits being fine, and bringing a good price. In some districts Apples and Plums are scarce, and the crops appear to have been much affected by local conditions. Fine fruit will be scarce, much sorting will be needed, and the selling price will be low for the bulk of the produce. *R. Lewis Castle, Woburn Fruit Farm, Ridgmont, Beds, August 10.*

BUCKINGHAMSHIRE.—Fruit crops are a fair average in this district, with the exception of Apples on orchard standards. Pyramids on the Paradise stock are carrying a good crop of fine fruits. Pears on walls are very poor, but are much better on pyramids. Strawberries were good, but soon over. Bush fruits abundant and good. *Chas. Page, Dropmore Gardens, Maidenhead.*

— In this neighbourhood the fruit crops are very partial, but Cherries predominate. Peaches and Nectarines are abundant, but in some places the trees are badly infested with red-spider. Among earliest Peaches, Alexander came in first this year, the first fruit was gathered on July 15; and Waterloo and Amsden June ripened subsequently. Amongst Strawberries of recent introduction I find Laxton's Leader produces very large fruits of good quality; Trafalgar is also a desirable variety, and Millbasket a splendid cropper of first-rate quality. *G. T. Miles, Wycombe Abbey Gardens, High Wycombe.*

— With few exceptions the Apple crop in this district is a failure, the trees however are in a fairly healthy condition, and free from insect pests. Of bush fruits there is an abundant crop—Gooseberries in particular—and the quality is good. Raspberries are better than we have had for many years. In some Plum-orchards the crops are good, whilst in others near by scarcely a fruit is to be found. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

— Plums such as Victoria, Green Gages, Prunes, and Damsons, are all bearing good crops; Apples are not half a crop. There are

no fruits of Blenheim Orange Pippin, and very few Cox's Orange Pippin, White Transparent, Duchess of Oldenburg, Ecklinville, and Keswick, have good crops. *J. Smith, Mentmore, Leighton Buzzard.*

CHESHIRE.—Many varieties of Apples have very little fruit upon them; Lord Suffield, Potts' Seedling, and Grenadier have average crops. Pears are rather better than Apples; Jargonelles, Williams' Bon Chrétien, Louise Bonne of Jersey, and Thompson's standards have good crops; of Marie Louise there is next to none on standard trees, though on trees against walls there are good crops. *Robt. Mackellin, Alney Hall Gardens, Cheddle.*

HEREFORDSHIRE.—We have 7 acres of Apple-trees, and not a bushel of fruits. *W. R. Morley, Fyghlestone Gardens, Berkhamsted.*

— Apples, Pears, and Plums are under average crops, due, I think, to the trees having exhausted themselves by carrying heavy crops last season. There was also a deficient rainfall during the later summer months last year when the fruit-lands were developing. This spring there was only a small quantity of bloom, and this set well, and was uninjured by frost. Pears are a better crop than Apples or Plums. Cherries are over average, perhaps a little under in size, but they are clean and free from cracking. Small fruits are average, but I make an exception with Raspberries, which are much over, particularly two varieties, Bonnet and Superlative. Of Strawberries, the crop has been large, and of splendid quality. *George Norman, The Gardens, Hatfield House.*

LEICESTERSHIRE.—Apples are very scarce in this neighbourhood, the best crops being on young trees on the Paradise stock, and some of the standard trees situate in the cottage gardens. Our own large trees in orchards under grass flowered very sparingly, and have scarcely any fruit; some of these bore heavily last year, and the primary cause of deficiency in the crop this season is exhaustion of the soil, and a consequent loss of vigour in the trees. Pears have suffered much from an attack of the mildew (*Diplasia pyricola*), this gets worse every year in spite of all measures taken to destroy it; the Pear slug (*Eriocampa limacina*) has been unusually troublesome this season. Strawberries have been exceptionally good, especially Waterloo from a north border; many of the fruits weighed 2 oz. each. The rain on June 30 and July 1 (1.01 inch) was just enough to save this crop. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NORTHAMPTONSHIRE.—In the gardens here we have not a single Apple, and the Pear crop is a very thin one. There was but little bloom on Plums, Apples, and Pears in the spring. Strawberries have been very plentiful indeed; and Currants (Red, White, and Black) are good in size and quality. Blight has settled on the Plum and Cherry trees. *H. Kempshall, The Gardens, Leampit Hall, Northampton.*

NORTHAMPSHIRE.—Taken collectively the fruit crop is satisfactory. All kinds set well, and passed through the spring without injury from frost. Since then the crops have been considerably damaged through insect attacks of various kinds. The long drought and excessively dry atmosphere has caused Apples to drop freely, Pears to crack, and a good percentage of stone fruits to shrivel during the stoning stage. Bush fruits are very plentiful, but small in size. *J. Roberts, Welbeck Gardens, Worksop.*

— Owing to the drought and easterly winds, aphids of all kinds have been very pre-

valent, and fruit-trees have suffered in consequence. Small fruits set spicadid crops owing to absence of spring frosts. Wall fruit generally is very good, and I a full crop. Pears on Quince in the open air are cropping well, but standard trees are almost a failure. *J. R. Pearson & Sons, Chilwell Nurseries, Leabham.*

OXFORDSHIRE.—The worst of all the fruit crops here is that of the Apple. There was no bloom at all on the trees in the garden. Pears-trees bloomed well, but the flowers set badly. This is a Cherry county, and the crop is heavy, and the fruit good. The Apple and Plum crops are poor, owing doubtless to last year's heavy crops. *A. J. L. and Wynford Court, Sand's Oxford.*

— It is difficult to explain the vagaries of the Apple and Pear crops in this district. In a well-managed sheltered orchard not a quarter of a mile from these gardens, containing local bearing varieties in young and old trees, there is not a bushel of Apples. I have a sprinkling of both Apples and Pears on all trees in the garden excepting Blenheims, Dunclow's Seedling, and Cox's Orange Pippin. Some trees of the latter variety in good condition are without a single fruit. Pears are a moderate crop; Monarch (Knight's) bears with me a heavy crop this year. Easterly winds with bright, scorching sunshine in the early stages of growth may account for a good deal in some situations, but does not explain the failure in sheltered situations. The Collins carry the heaviest crops this year. All foliage is healthy and clean. We are sheltered from wind, and have an elevation above sea-level of 528 feet. The soil is a heavy loam. Our rainfall for the first four months of the year was as follows:—March, 2.16 in.; April, 2.71 in.; May, 1.28 in.; June, 1.70 in. *James A. Smith, Sarsden House Gardens, Chipping Norton.*

SURRESHIRE.—Apples promised well, but the bloom was cut badly by east winds, and the crop is very irregular; some trees of my own are carrying full crops, and looking well, but there are gardens near where they are a failure. In my own case, the trees are well sheltered from the morning sun. My best are Cox's Orange Pippin, Bramley's Seedling, Potts' Seedling, Ribston Pippin, Nonsuch, Bess Pool, and Red and White Astrachan. *A. S. Kemp, Broomway, Staines.*

STAFFORDSHIRE.—This has been a very peculiar season for hardy fruits, but fortunately in this district, we escaped with only very slight frosts during the period the trees flowered, and a good set followed. Insect pests, and aphids in particular, A. crasi on the Cherries, and the blue variety A. pruni on the Plums, have been more troublesome than I have ever known them to be. *Geo. Woodgate, Rolliton Hall Gardens.*

WARWICKSHIRE.—The Apple crop is under average. Trees of Blenheim Orange have no fruits, and the crop on Dunclow's Seedling (Wellington) and Mère de Ménage is poor. There are plenty of Pears, and the trees are clean and promising. Cherries were very good. Apricots are good in quality, and plentiful. The small-fruit crop has been far above average, both in quantity and quality. Strawberries were abundant and good. *James R. Lyon, Curlew's Park Gardens, Warwick.*

— Owing to long drought, which brought in its train innumerable pernicious insects, the Apple and Pear crops in this district are thin. Strawberries have been a good crop, as have Gooseberries, Currants, and Raspberries. For prolonging the Strawberry season we have nothing to equal the old variety Eleanor. *H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth.*

WARWICKSHIRE.—Notwithstanding the absence of frosts during the whole of the flowering period of Apples and Pears, there will be a marked deficiency of both fruits throughout this district. The deficiency is somewhat singular; in some orchards a few trees are found to be in full fruit, whilst others are as completely without, and from personal observation this appears to be the case within a radius of 5 miles from my house. Plums are not even so

plentiful as of yore, and a slender one is apt to forget, but during the observation of many years, this is the only one in which I have failed to notice that either Kidney Beans, Potato, or other tender plants, have been touched by frost; so that the causes of decided "under average" amongst both Apples and Pears must be looked for, from the deteriorations working of some other physiological influences, which perhaps some learned scientist will be able to explain or

LILIES AND THEIR CULTURE.

(Continued from p. 67.)

MINIATURE LILIES.—Under this heading I have grouped together a few Lilies of small growth which are not generally easy of cultivation, that is to say, they do not last more than one year unless they are given special attention. Their bulbs range in size from that of a large Pea to a Walnut. They are easily damaged, and must be carefully enveloped in sandy grit when they are planted, as they are not very free rooters, losing most of their basal roots as well as their stem roots every year. They start into growth in early spring, and reach the flowering stage without making more than a few basal roots, these being produced in greater number and strength after the plants have flowered. On the other hand, they will make vigorous stem roots if planted in a suitable compost, far outnumbering the amount of basal roots these plants produce in a year under ordinary conditions, inasmuch that success or non-success depends on the number of stem-roots it is possible to encourage. If they are planted in a dry soil, they make no stem-roots at all, their flowers are, as a consequence, puny, and the bulbs perish after flowering. Given a good soil of a friable nature, in a position sheltered from winds, in full sunshine, and if they are well watered whenever they approach dryness, they will thrive and multiply at a rapid rate. Their flowers, though small, are among the most brightly-coloured of the group, and are invaluable for cutting. The plants would look best on a rockery where there is the necessary amount of moisture. They would well repay the trouble of preparing a special place for them.

One of the brightest of all Lilies is *L. tenuifolium*, a species that produces a slender stem a foot high (as a maximum), clothed with numbers of linear leaves barely 2 inches long, and from six to ten rich terra-cotta or scarlet tubulate, nodding flowers on a loose spike. The flowers span an inch across, and may be roughly described as like those of miniature chlorobanicums. Everyone who sees the plant wants it.

Lilium concolor is another pretty species growing about 9 inches high, and bearing two to three erect, flat, star-like, crimson flowers, slightly spotted at the base. Its variety *Cardinal* is a rich yellow flowered form, slightly spotted and heavily flushed with chocolate colour as the flower ages.

L. pulchellum is a taller plant, 1½ ft. high, with erect spikes of flowers of a rich tint of crimson, heavily spotted black in the lower half of the flower. It is the rarest of the concolor forms, and somewhat difficult to grow.

L. rubellum, figured on p. 12, a beautiful new Lily, may be included in this group on account of its cultural affinity. It grows 1 to 2 feet high, and bears from one to three funnel-shaped, rich rose-coloured flowers, each measuring 2½ inches in length and span. A little canine spotting occurs in the tube of the flowers. It is one of the earliest of all Lilies to flower.

The kindred *L. Krameri* (*L. japonicum*), a slender autumn-flowering plant attaining a height of 2½ feet, is included in this group on cultural grounds. It produces solitary trumpet-shaped flowers, with spreading limbs of a pale pink colour. It is a very delicate Lily, and rather difficult to grow. It succeeds well under the conditions given for miniature Lilies. Although its roots are further advanced when it flowers than is the case with those of *L. rubellum* and *L. concolor*, it is always necessary to keep the soil well tilled and damp throughout the growing season, for

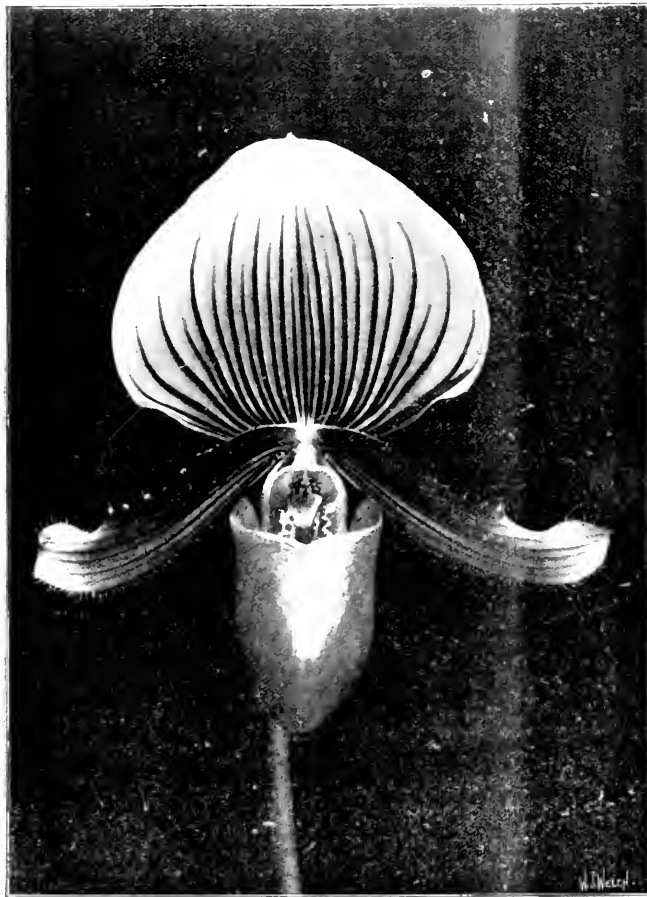


FIG. 11.—CYPRIDIUM MATELLI MAGNIFICUM.

Shown by Captain G. W. Low, in a field at a Meeting of the Royal Horticultural Society, 1860.
First class Certificate. Described on p. 102, *Gardener's Chronicle*, August 3.
Photographed by Mr. H. J. Chapman.

favourably circumstanced, and will be much under average. Cherries are better, more particularly Morellos on bush trees, which are really fine. Hazel and Walnuts are plentiful, especially the latter, of which there are some grand trees around Leze. Strawberries of all varieties, where well grown, were good and plentiful. The hot weather ripened them so quickly as to produce unremunerative prices in the market, and their continuation was shortened by an atmosphere of abnormal heat. Red and Black Currants and Raspberries are plentiful and good. Without reference to a

throw light upon. The wild Crab Apple in hedgerows, and also cultivated varieties in my grounds, are practically fruitless. This is further proof that although frost was absent all during the flowering season, there existed some other element which was seriously prejudicial to the setting. The foliage of trees, and the general healthful appearance of the sylvan beauties of the country, were never, perhaps, seen to better perfection than they are this year. W. Miller, *Berk. Hill.*

(To be continued.)

the flower is large in proportion to the plant; and any check the plant may receive from drought will invariably result in a withered bud. A few colour-forms of *L. Kramerii* have occasionally appeared, including a white one, but they have usually been of a more delicate constitution than the type, and have ultimately disappeared. A multi-flowered form is grown in Japan, which may turn out to be an improved rubellum, judging from paintings of the plant. All the *Lilices* in this group are perfectly hardy plants, natives of colder climates than our own. The secret of success with them is in the careful management of the stem-roots. *Geo. B. Mallett.*

(To be continued.)

FOREIGN CORRESPONDENCE.

FERTILITY OF FIGS AND THEIR POLLINATION.

IN Tournefort's *Travels in the Levant* he tells how Figs fall immature from the trees, unless the Fig-grower introduces male flowers, and a small wasp to carry the pollen through the aperture at the apex of the Fig to the pistillate flowers inside. In California a large orchard of Smyrna Figs behaved in the same way—the fruit fell from the tree at an early stage, as an over-crop of young Apples do in an orchard. He sent to the Old World for male plants and the Fig insect-fertiliser, and now has bountiful crops. The Figs are put up in marketable shape, and are equal to the best in the markets of the Old World. A Fig orchard that was a disastrous failure has become a valuable commercial enterprise. Some of these Figs sent to me seemed hollow. One eminent microscopist could find no radicle or cytoblasts, another thought traces could be discerned. I settled the question by washing out and sowing the seed, and they grew beautifully. There seems no doubt but that these Smyrna Figs behave as they are represented to do.

Now I have been looking at and eating Figs grown in the open air and in glasshouses for over half a century, Figs of many varieties, though I do not remember any one that might be called especially the Smyrna Fig. I never knew any one to fall off for lack of pollination. With the results of my Californian friend's Fig orchard before me, I suspected that possibly there might be a few staminate flowers near the apex in Figs generally, and that the "Smyrna" Fig was a wholly pistillate kind. I only grow a few Figs in my garden, just to have them; not being hardy in Philadelphia, we have to bury them under the earth in winter for protection. I have only Early Proflie, Castle Kennedy, Angelique, White Ischia, and Brown Ischia. The first crop has been ripening since July 25. They are fine large fruits, some nearly as large as duck eggs, and of delicious flavour. I can now say they are purely pistillate, no trace of an anther anywhere within the flower. The seeds are certainly hollow, as a Pine seed is when unfertilised. I need not give illustrations, but we all know that many things will perfect a "fruit" without perfecting seeds. The Navel Orange may, however, serve for one who may not have met with an instance. It is no surprise that the receptacular "fruit" of the Fig will perfect without maturing seeds.

Now, why should this "Smyrna" Fig behave in this way? This is what troubles me. Do any of your readers of the *Gardeners' Chronicle* know anything about it? *T. M., Philadelphia, U.S.A.*

INDIA.

FLORA OF THE SOUTH LASHAI HILLS.—In the spring of 1899, Dr. A. T. Gage, Curator of the Herbarium, Royal Botanic Gardens, Calcutta, made a short botanical excursion into a portion of the South Lashai Hills as far as Fort Langleh, one of our outposts. Dr. Gage describes the general features of the flora of the South Lashai Hills, which run N. and S. between latitude 22° and 24°, longitude 92° to 94° E., as practically the same as those of the adjacent Burmese hills; epiphytic Orchids being very much in evidence, chiefly species of *Dendrobium*, which form masses of colour on the trees. Among these he found sixteen *Dendrobes*, including such old favourites as *formosum*, *anceps*, *cretaceum*, *transparens*, *Devonianum*, *fimbriatum*, *chrysanthum*, *aggregatum*, and *chrysoxanthum*, *Oberonia iridifolia*, *Bulbophyllum Lobbianum*, *Eria convallarioides*, *panicea*, *bambusifolia*, and *tomentosa*, with *Phajus maculatus* and *abusus*. He also found six species of *Coleogyne*, among them *Gardneriana* and *maculata*; four *Pholidotas*, two *Cymbidiums* (*lanceifolium* and *pendulum*), *Phalenopsis cornu cervi*, *Aerides Fieldingi* and *odoratum*; the pretty *Renanthera Indochiniana*; *Vanda teres* and *coriacea*; *Saccobolium papillosum*, and a single "Slipper Orchid," viz., *Cypripedium vilosum*. The great Scitamineae order was represented by *Hemiarthris burmanica*, *Hedyclium villosum*, *Carex zosteria*, *Anomum dealbatum*, and *Alpinia malaccensis*. Among Palms were found *Pinanga gracilis*, *Caryota urens*, *Licuala peltata*, and *Calamus tenuis*. The Aroids were also well represented, chiefly by species of *Rhaphidophora* and *Pothos*. There were also a good many Ferns found, among them the beautiful *Pteris bianrita* and *Asplenium sylvaticum*; altogether twenty-three species. Three Jasmines were found, among them the pretty and distinct *J. Listeri*, collected by Lister in the Chittagong Hill Tracts in 1876. The entire scene was towered over by huge specimens of *Dipterocarpus turbinatus*, *Toddalia aculeata*, the so-called "Wild Orange of the Nilgiris," was also found. In common with this were found its near relatives, *Murraya exotica*, *Microcinnum pubescens*, *Clausena sultriflora*, and *Citrus medica*, all of these now being placed under Rutaceae.

Dr. Gage, who was able to get together 317 species, Orchids coming first with 19, Ferns 23, Leguminosae 18, Ericaceae 15, Rubiaceae 11, Euphorbiaceae 13, Acanthaceae 11, and Compositae 10 species, these among Phanerogams; of the remainder there were one order with 8 species, one with 7, ten with 6, three with 5 species, nine with 4, ten with 3, thirteen with 2, and twenty-eight with 1 species. The tour commenced on March 15, and ended on April 30. *Indian Gardening.*

HERBACEOUS PHLOXES.

THE very large collection of these beautiful hardy plants, now so freely blooming in the Royal Horticultural Gardens, Chiswick, affords to the Fellows of the Society an admirable opportunity to make selections of what may seem to them to be the best varieties. With so many diverse colours or markings, it is but natural that selections should differ very much. Just as the tastes of the selectors differ, there seems to be no doubt but that pronounced colours produce the best general effect, although there are few varieties that do not seem to be charming when looked at closely. It is one of the excellent features of herbaceous Phloxes, that if some plants or stems be pinched back early in their growth, they will branch out, and thus, if others

remain untouched, to bloom early, greatly prolong the flowering season. Still further pinching tends to produce comparative dwarfing. Where several plants of a variety are grown, some of each variety can thus be stopped, and late bloom ensured.

To have good effects from Phloxes in borders, plants should be put out in triples anglewise, as if in that way a dozen heads be produced, the effect is very telling. Some young shoots taken off quite early in the spring, when but from 2 inches to 3 inches long, should be inserted into pots as cuttings every year, thus ensuring a continuous stock of young plants; a further advantage is that the new season's shoots are thus thinned, and that is beneficial, as stocks should not carry more than three or four stems at the most.

Plants from cuttings the first year may be finely flowered in 6-inch pots, on single stems, in cool-houses or conservatories, or for outdoor groups, or they may be plunged into beds to fill vacant places. Then in the autumn they may be planted out into borders, to bloom for two years, after which they should be replaced by younger plants. Being somewhat free surface-rooters, it is needful to give ample moisture as the plants age; the stems also become more crowded and tall each season.

With respect to varieties, a selection of a dozen made at Chiswick is thus:—*Sylphide*, 30 inches, pure white, very fine; *Berencie*, pure white, 20 inches; *Croix du Sud*, white, red eye, very charming, 2 feet; *Regulus*, rich rosy-carmine, 2 feet; *Jacques Benuet*, pink, red eye, 2 feet; *Parthenon*, rosy-lilac, 16 ins.; *Cameron*, white, rose eye, 2 feet; *Cocquelicot*, brilliant vermilion, 30 inches; *Comet*, bright rosy pink, 2 feet; *Montagnard*, intense crimson-red, 30 inches; *Lebenger*, red, shaded purple, 30 inches; and *Fernando Cortez*, reddish-carmine, shaded rose, 2 feet.

A further selection of twelve, made a few days subsequent to seeing the Chiswick collection, gave the following as very beautiful at Long Ditton:—*Avadameh*, pure white, 18 inches; *Les Orlives*, lilac, red eye, 18 ins.; *Huri Marger*, white, with rose eye; *Marquis de Breteuil*, carmine-pink, 16 inches; *Le Siecle*, rosy-carmine, 15 inches; *Regulus*, deep carmine, 18 inches; *Joelyu*, deep scarlet, 18 inches; *Le Maquart*, purple, 16 inches; *Robur*, violet-purple, 20 inches; *Tempete*, rosy-carmine, shaded crimson, 2 feet; *Paul Bert*, white, flushed and shaded blue; and *Souvenir d'Emile Leibig*, soft, clear pink, with magenta edge. *A. D.*

NURSERY NOTES.

THE HANDSWORTH NURSERIES, SHEFFIELD.

(Continued from p. 128.)

EVERETT'S SHRUBS.—*Aucuba japonica* is one of the commonest and best plants for a shrubbery, or for planting under trees. The variegated varieties, when planted as single specimens or in groups upon the lawn, are exceedingly decorative providing they berry freely, which they will generally do if care be taken to plant both sexes near to each other. At Handsworth we not only saw a large quantity of the shrub, but the plants were more freely variegated than is commonly the case. *Beberis aquifolium*, *B. empetrifolia*, and *B. Darwinii*, the two latter being the parents of that extremely ornamental plant *B. stenophylla*, were all noticed in excellent condition. Messrs. Fisher, Son & Sibary cultivate a very large stock of a broad-leaved Box, of uncommonly good habit and colour, named *Handsworthensis*. In the nur-

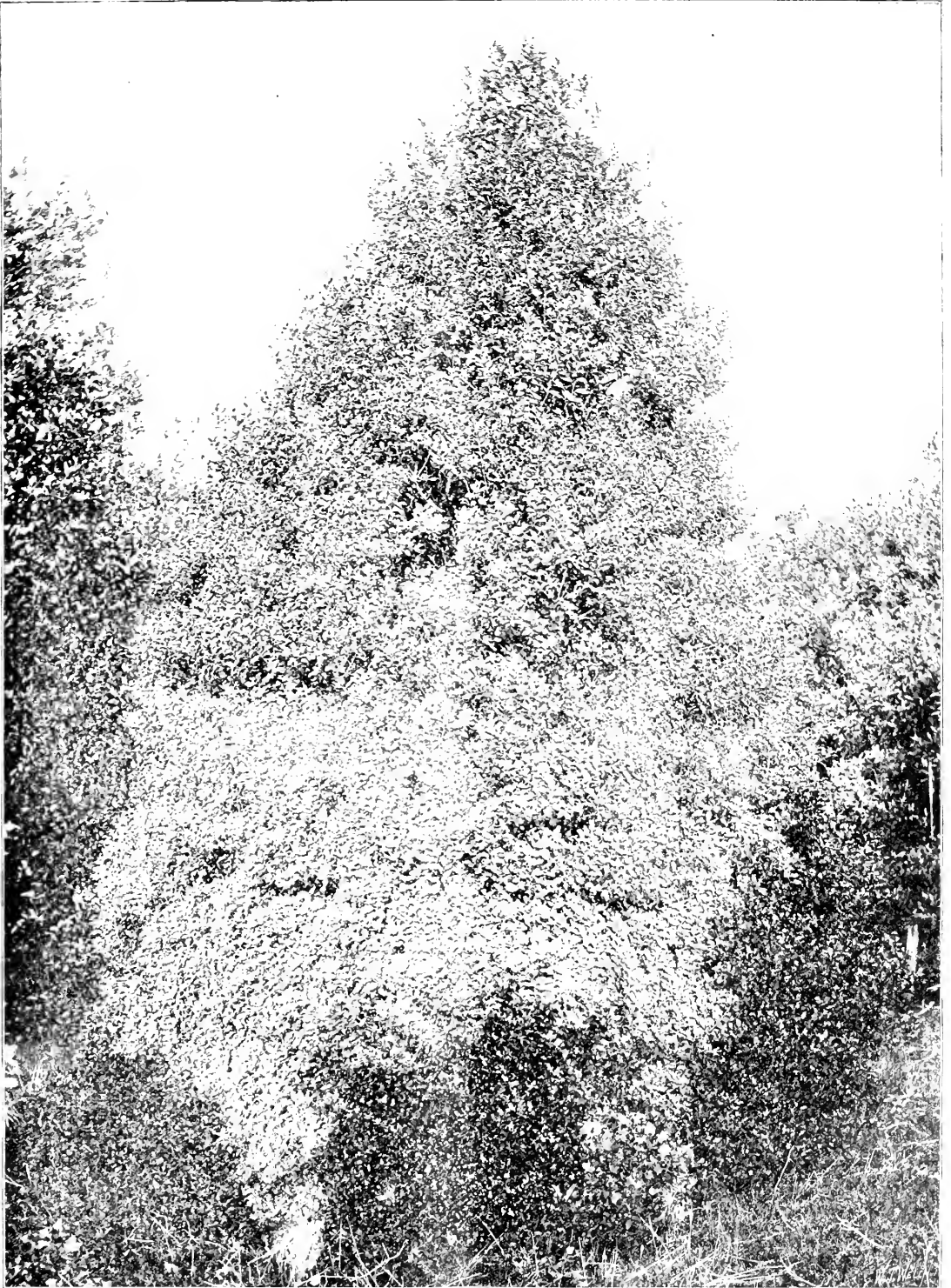


FIG. 12.—SPECIMEN PLANT OF *ILEX HANDSWORTHIENSIS* IN THE HANDSWORTH SUBSERIES, SHEFFIELD. (SEE P. 132.)

series, this variety grows so freely, planters of Box in shrubberies would do well to make acquaintance with it. Gold and silver variegated Box, and a pendulous variety with green leaves were observed. *Eunymus*, *Eurya*, the *Brooms*, *Cotoneaster*, and other species of ornamental evergreen shrubs, were upon one hand or the other. The Tree Ivies deserve special mention, there being an uncommonly good stock of plants of all sizes, in pots and in the open ground, for planting amidst shrubs, or for any purpose.

The evergreen flowering shrubs include a fine collection of *Rhododendrons*, and it being held to be necessary to supply these plants to colour, and to flower at certain dates, a considerable portion of the stock consists of named varieties. Two varieties are specially recommended by the firm for flowering early in the season; they are *Handsworth White* and *Handsworth Scarlet*. There was an excellent stock of the useful *Olearia Haastii*, and of many species of so-called American plants. In passing, we observed in bloom *Genista pilosa*, a pretty little prostrate species, that merits a place in the rockery.

DECIDUOUS SHRUBS.

The patch of brilliant colour we observed at *Handsworth* from a batch of plants of the golden-leaved Elder will not be easily forgotten. Not only were the plants of exceptional colour, but the variety was that with lacinated leaves. What could be more effective for affording colour in pleasure-grounds than this plant? A representative collection of single and double-flowering *Lilacs* is grown, and the *Weigelas*, *Philadelphus*, *Prunus*, *Rubus*, *Spiraea*, *Viburnum*, *Deutzia*, *Hydrangea*, *Cytisus*, &c. A new variety of *Cytisus* named *Handsworthensis* is described as an excellent form of *C. Scloppkensis*, with flowers that are almost pure white.

ORNAMENTAL AND FOREST TREES, HERBACEOUS PLANTS, &c.

We have not the opportunity at the present time to refer to the forest trees at *Handsworth*. There may not be anything particularly new among them, but there is an excellent stock of all the species known to be useful for any purpose.

Of the ornamental trees, the golden and variegated-leaved Elm, Beech, and Oak, are of principal interest. *Quercus robur concordia* (golden), *Q. v. argentea* (silver), *Q. coccinea*, the scarlet-leaved Oak, so effective in autumn; *Fagus sylvatica aurea marginata*, *F. s. argentea marginata asplenifolia*, *F. s. cristata*, *F. s. laciniata*, and *Purple Norwegiana*, are some of the best Oaks and Beeches. One of the best varieties of Elm for street or park planting is one called *Wheatley*, and Messrs. Fisher, Son, & Sibbery export this in large quantities to America.

There is an attractive avenue of Beeches through a part of the nurseries, the varieties purple *Norwegiana* and purple *pyramidalis* having been planted alternately. An exceedingly bold variety of the so-called *Service-tree*, *Pyrus aria himalaica*, with exceptionally large, very white leaves, attracted our attention, and the purple-leaved *Beech* near by afforded a good contrast.

In a large collection of Limes, the best for ornamental purposes are the varieties known at *Handsworth* as *crimson-twigged*, *orange-twigged*, and *red-twigged*.

Conifers take their place in the nurseries at *Handsworth*, and few species or varieties exist but may be found there. We noticed the very effective *Cedrus atlantica glauca*, *Picea pungens glauca*, and some unusually good young plants of the *Umbrella Pine* (*Sciadopitys verticillata*).

Of hardy climbers in pots there were many, and it was said that of shrubs and other plants there were as many as 250,000 in pots plunged in the ground, that they may be sold at any season of the year.

In this review of Messrs. Fisher, Son & Sibbery's Nurseries we cannot describe the herbaceous flowering plants or fruit trees, but collections of both kinds are cultivated there.

Our illustration (fig. 42, p. 131) shows another of the fine specimen Hollies referred to in our last issue.

The Week's Work.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Cleaning Strawberry-beds.—Established beds that are to remain for another season should be pelleted of all superfluous growth forthwith, and the ground cleared of weeds and rubbish, before the beds become a crowded mass of foliage. Where runners have not been specially layered for forming new plantations, select the best rooted runners before cleaning the ground, and plant them temporarily on a partially shaded border, until the new quarters are ready to receive them.

Strawberries for Main and Late Crops.—Following the planting of runners for the production of the earliest crop mentioned in last week's Calendar, preparations should be made for those of the main and latest crop. If the site has not been previously trenched and prepared, a piece of ground should be chosen that requires little preparation, ground which has yielded some light crop since it was trenched, and which, if forked over and afforded a dressing of thoroughly rotten stable-manure, will suffice. When this has been done, if the ground is dry, apply water in sufficient quantity to moisten it thoroughly, and the next day it will be in condition for levelling and treading over to make quite firm. Presuming the runners have been layered into pots for planting, a good crop of fruits may be expected next year if attention be given to watering, &c., during the next few weeks. As these plants are usually allowed to stand for about three years, they should be planted at a distance of 2 feet apart each way, another foot being allowed at every third or fourth row, to serve as an alley and convenience for working among the plants.

Varieties to plant.—One of the most popular varieties grown at the present time is undoubtedly *Royal Sovereign*, which, besides fruiting early when on a warm border, is one of the best all-round varieties for general cultivation, and the fruits being firm, travel well. A rather darker fruit is preferred by some, which the new variety "The Laxton" promises to supply. *President* is a variety of excellent flavour, but somewhat soft for packing; while *Sir Joseph Paxton* is an old market favourite that crops well, is of good colour, and is one of the best for packing. Other good varieties are *Lord Sullield*, with large, handsome, dark crimson fruits, richly flavoured; and *Empress of India*, a fine dark fruit with a slight Pine flavour. Later varieties include *Veitch's Perfection*, a good variety of the British Queen type, and *Waterloo*. Two good varieties for latest cropping are *Elton Pine* and *Oxonian*, which should be planted on a border having a north aspect.

FRUITS UNDER GLASS.

By MARGARET McINTYRE, Gardener to Sir CHAS. TESSNART, The Glen, Innerleithen, Peebles-shire.

Peaches and Nectarines.—Trees started in December and early January will still need to be kept moist at the roots, or the flower-buds will fall later on. If any of the trees look weakly, afford them liquid-manure in place of clear water. It must be remembered also that if water be applied when unnecessary it will tend to sour the soil, and destroy the fibrous

roots. The ammonia and nitric acid in rain-water help to prevent the buds from starting prematurely. Any laterals that are still green and unripe should be retained. Early-forced trees do not as a rule make strong growth, and they form generally a larger proportion of single fruit-buds than trees grown under more favourable conditions. When pruning, do not cut back the wood that will bear next year, unless it is of unusual length. Very little pruning will be needed if disbudding has been done properly, but no more wood should be tied in than will be required to replace the bearing wood of the current year, and to renew worn-out growths. Any trees which have grown too vigorously must be lifted, and their roots laid in firmer material nearer the surface. Others that may show symptoms of weakness should have the old soil carefully removed from amongst the roots, in place of which put a compost of turfy loam and steamed bone-meal and wood-ashes, the two last-named ingredients in the proportion of a bushel to a cart-load of loam. These operations require to be performed as soon as the leaves have matured, but before they fall from the trees. Afford a good watering both to the lifted and replanted trees.

Succession Houses.—Cut away shoots that have borne fruit, unless such as are required for the extension of the tree, and if the other growths are too numerous they will also need to be thinned. This will allow the foliage to be more readily cleaned by repeated syringings. If fruits are ripening, maintain in the hours a free circulation of air, and afford sufficient water only to the roots to prevent the foliage becoming limp; damp the surface of the house occasionally.

Late Houses.—Thin and regulate the summer growths, and if they are laid in thinner than is customary with mid-season trees, the wood will have a better chance to ripen. Strong growths must be cut back or removed altogether, as they induce an unequal distribution of sap, and bring about unfruitfulness and gumming. Endeavour to secure moderately strong, short-jointed wood, and ventilate the houses early in the day, closing in good time so as to increase the temperature by sun-heat, which will not do any harm after evaporation has been going on for some time if care be taken to admit a little air before nightfall. The night and early ventilation tends to the solidification of the growth and its ripening. Keep the trees free from red-spider by forcible syringing until the fruits give indications of ripening. The borders must be well supplied with water or liquid manure, and be mulched with soft manure.

THE FLOWER GARDEN.

By T. H. ST. AUG, Gardener to Lord Baltimore, Puttmore Park, Exeter.

Clethra, or Sweet Pepperbush.—As these shrubs are now commencing to bloom, I may direct the attention of intending planters to them, that they may be planted later in the season. *Clethras* are most useful for planting where a continuance of flowering shrubs is desired throughout the summer. The plants are not expensive, nor are they fastidious as to soil. *Clethra alnifolia* is most frequently seen, and it forms a compact-growing shrub, varying in height according to the nature of the soil; it grows most rapidly, and attains to its largest size in a moist situation, and in fairly heavy land—near a stream, for instance. Their sweet-scented, feathery spikes of white flowers show above the light green leaves of the plants. The plants require little attention after they are established, beyond removing the spent flower-spikes. Some that were planted in these grounds about four years since have now grown into nice-sized bushes. Another one is *C. acuminata*; but *C. alnifolia* is the best for general planting.

Olearia Haastii is another pretty shrub, flowering in August, its neat, compact habit rendering it useful for many purposes. I have planted them in beds of medium size, and they

are also effective as single bushes in the shrubberies. There are several varieties of Olearias, but for ordinary purposes *O. Haasti* is probably the most reliable and hardiest.

Hydrangea paniculata grandiflora.—The flower-trusses of these will soon be expanding, and the plants should be afforded a thorough soaking with water or liquid-manure if at all dry; they may need some support whilst in flower. Standard plants of these *Hydrangeas* especially should be securely staked. While the dwarf-growing plants of these are useful in beds, standards with 3 or 4 feet stems are very suitable for growing over some low-growing shrubs, and they appear to give equally fine trusses of bloom.

Gallonia (Hycinthus) caudatus.—The flower-spikes will need to be supported, and if the bulbs are growing among small shrubs, see that the flower-spikes have sufficient room to be effective. The stock may be increased by sowing seeds, or in less time by planting bulbs later in the season.

Humea elegans.—Sow seeds in light, sandy soil, in pots or pans, and place them in a close frame until germinated; they are useful alike for subtropical bedding, groupings, and cutting purposes.

Roses.—Cuttings of any favourite kind may be put in, selecting fairly ripe wood for the purpose; they may be taken off with a heel, or cut across just below a joint. A close, one-light frame, containing a few inches of sandy soil or grit, and road-scrappings mixed with it will answer. Insert the cuttings a few inches apart, and let them remain until new growth has commenced. It is preferable to put them into small pots than in the frame. Place one cutting in each pot, and when nicely rooted shift them on as required. When dibbled in a frame, many of the cuttings may callus over to form roots, but fail to make much progress if potted up, as they are injured by any disturbance at that stage. The cuttings put into small pots should be plunged in fibre or ashes in the frame, and sprinkled occasionally overhead with water, keeping the frame moderately close.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK BOLLE, Becton, East Bullerly, Devonshire.

Cauliflower.—The coming week will be a good time to sow seeds for plants to stand through the winter. Select an open position, and deeply dig the soil, adding manure if necessary. Make the soil moderately firm, and take out shallow drills 6 inches apart from each other, watering the same a few hours previous to sowing the seed. If the weather be very dry, cover the seed-bed with a few mats until the seeds have germinated, then immediately substitute a net for the mat. The net will need to be supported by a few forked sticks to keep it clear of the plants. Afford the plants water when this is necessary, and dust them occasionally with wood-ashes when the leaves are moist. Early London, Sutton's First Crop, and Veitch's Autumn Giant are good varieties for early sowing.

Spring-sown Onions are bulbing up well, and should there be any stiff-necked plants, gently bend them down with the back of a wooden rake. The crop should be ready for lifting towards the end of the present month.

Turnips.—Make another good sowing of the varieties Snowball and Veitch's Red Globe for late winter and early spring use (see Calendar in *Gardeners' Chronicle* for July 27). Those sown about that date may need water, and should be frequently dusted with lime and wood-ashes. Thin the plants to 1 or 6 inches apart, which work should be done when the soil is in a moist condition.

Potatoes.—Should the ground be required for another crop, second early varieties may be lifted. The varieties Surprise and Supreme have enormous crops here. The tubers are of good size and quality, and quite free from

disease. Too much care cannot be exercised in clearing small tubers from the ground when lifting the crop.

Tomatoes.—Gather the fruits as soon as they ripen, and feed the plants with some approved stimulant twice or more times each week. Plants prepared for winter fruiting must not be neglected in the matter of water, and the timely removal of all side growths; and if standing in the open, make them secure against wind by fastening the stake to a horizontal-strained wire, similar to that used for *Chrysanthemums*. Mould loam, with a fair sprinkling of bone-meal, is a good root medium for the final potting. Be firmly to encourage short-jointed growth, and use pots not exceeding the 10-inch size. *Tomatoes* planted out against walls or fences should be examined once a week, cutting away all superfluous foliage, to expose the fruits to the sun. Water the plants abundantly during dry weather.

Salads.—Mustard, Cress, and Radishes may still be sown on cool positions. Late Radishes need a sheltered corner, and should be sown in the first week of September. The ground must not be allowed to get in any degree dry.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to RUSSEY PARK, Esq., Freestwood Hill, Longborough.

Paper-White and Double Roman Narcissus.—Amongst the early-flowering bulbs, these are of first-rate importance. The cultivation they need is similar to that I have previously advised for Roman Hyacinths. Pot five bulbs into a 6-inch pot, and plunge the pots in ashes for a few weeks until the bulbs have commenced to grow, and have filled the pots with roots, when they may be removed, and subjected gradually to the light. Pot successive batches of bulbs to maintain a supply of flowers from November to January.

Early Tulips of the Due Van Thol varieties may be started as soon as the bulbs are obtained. Where large quantities are forced, a convenient method is to start the bulbs in boxes, putting fifty bulbs in each box. They should be plunged in ashes just as bulbs in pots. They are best brought on afterwards beneath the stages of the forcing-house, or the bulbs should be covered with moss until the flowers are so far advanced and the stem-growth sufficiently lengthened to be of use for cutting. The bulbs can then be potted up, six bulbs in a pot, and arranged as to height and time of flowering in a more satisfactory manner than when the bulbs are potted in the first instance.

Salvia splendens, and Eupatoriums.—Plants growing in pots may now be transferred finally to 6-inch pots. Use a generous compost of loam, leaf-soil, and well-decayed manure, adding a little bone-meal and fine mortar-rubble in place of sand. Plunge the pots in a bed of ashes, and pick off all flowers as they appear. Sprinkle the plants after hot days, and when they have filled the pots with roots afford them waterings with liquid-manure.

Bonnetias.—Continue to pinch the growths, as a means of obtaining a good head to the plants. Plants growing in frames, whether planted out or not, require frequent supplies of water, and an abundance of air at all times. Before lifting the plants, take the precaution to cut around each with a sharp spade ten days or a fortnight previously. Plants that were rooted late are in a condition to be transferred to 5-inch pots for flowering, after which they should be placed in a frame, and for a time shaded and syringed daily. Afford more ventilation as the plants become established in their pots, and apply an occasional dressing with an artificial manure, such as Clay's or Standen's. A small teaspoonful of manure to a 6-inch pot will be sufficient. Water this in as soon as it has been applied.

Tree Carnations.—Pot on the late batch of winter-flowering Carnations, and put them in frames, where they must be afforded ample protection from heavy rains, but expose the

plants fully to the sun. Tie the growths of the earlier-potted plants to neat painted sticks. Any tendency to flowering that the early-propagated plants may show may be stopped by pulling out the young embryo buds and pinching the shoots. Put *Marguerite Carnations* into 6-inch pots in which they will flower. Formerly we used to plant these out and lift and report them in September; owing to the failure of the buds to swell and develop, the practice was abandoned, and the system of continuous pot-culture adopted. A compost of turfy loam, leaf soil, with fine pounded charcoal and mortar-rubble, is the best to encourage root action. Pinch out the most gross-growing shoots, and frequently turn the plants round, allowing space for the air to circulate amongst the plants. It is essential that Carnations of every type be afforded an abundance of fresh air.

THE ORCHID HOUSES.

By H. J. CHAMMAN, Gardener to R. I. MANSFIELD, Esq., Cambridge Lodge, Finsbury Road, Camberwell.

Laelia-Cattleya elegans.—There has been considerable difficulty in the past in distinguishing the difference between *L. C. elegans* and *L. C. x Schilleriana*, and even now one frequently sees the latter hybrid labelled *L. C. x elegans*. Yet they are perfectly distinct. *L. C. x Schilleriana* is from a cross between *Cattleya intermedia* and *Laelia purpurata*, and *L. C. elegans* is doubtless a hybrid between *C. guttata* and *L. purpurata*. The ground colour in *L. C. Schilleriana* is bluish-white, with a crimson front lobe; the latter hybrid generally has deeply suffused purple flowers, and a lip of totally different shape. *L. C. x elegans* now developing growths must be encouraged in every way. This hybrid succeeds best when grown in baskets, in a slightly higher temperature than that of the *Cattleya-house*; suspended over the *Vandas* they do capitally. Afford the plants as much light as possible, and shade only from the sun during the very hottest part of the day. They require a liberal supply of water, and should be dipped in such a manner that the compost will be thoroughly wetted. The varieties most in demand are the highly-coloured or *Turcici* type, and they are among the most expensive of this section of hybrids. *L. C. Schilleriana* is much more variable, possibly owing to the varied tints of colour seen in *L. purpurata*, one of its parents. These hybrids are also making growth. They succeed best in warmer conditions than those of the *Cattleya-house*.

Cattleya Bowringiana is now rapidly extending its growths, and should be placed in a light position at the warmest end of the *Cattleya-house*. Care must be taken not to over-water this plant, especially during periods of dull weather; the least excess of water at the root causes the outer shields of the growth to turn black at the base and the growths to decay. Too much shade will also cause damping at the present season of the year. Hybrids partaking of the parentage of *C. Bowringiana* are generally similar to it in growth; and the above remarks will apply also to these—*C. Mantini*, *C. Mrs. Wheatley*, *C. Portia*, &c. *Parysitis*, are among the best of this section. They succeed best suspended close to the roof-glass, and are generally late before starting into growth, needing a little more heat than that provided in the *Cattleya-house* to induce them to mature their growth before the winter months.

Hybrids of *Laelia Percini* and *Cattleyas* constitute some of the most beautiful of the autumn and winter-flowering kinds. They are frequently despised because the flowers are smaller than those of most other *Cattleyas*, but there are many among them of great value. They succeed best suspended near to the roof-glass, and should be grown in well-drained baskets or shallow pans. They possess a good constitution, and growing through the bright months of the year, they are comparatively easily cultivated. Potting may be done immediately after the flowers have been removed.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, Aug. 21	(Shropshire Horticultural Society's Exhibition at Shrewsbury (two days).
THURSDAY, Aug. 22	(Royal Horticultural Society of Perthshire's show (three days).
FRIDAY, Aug. 23	(Strathleven Horticultural Society's Show.

SALES.

FRIDAY NEXT.—Imported and Established Orchids, Roman Hyacinths, Lilium candidum, Bulbous, Kew's Seeds, Bulbs from Constantinople, &c. at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick.—61.5

ACTUAL TEMPERATURES.—

LONDON.—Jan. 11 (6 P.M.): Max. 71; Min. 60.
 Annot. 15.—Dull, rainy, warm.
 PROVINCES.—Jan. 11 (6 P.M.): Max. 61, Cornwall; Min. 58, N. E. Scotland.

THE Official Report of His Majesty's Commissioners for the Paris-International Exhibition, 1900, is now issued. It is evident that, although Britain and her Colonies were represented, the results were by no means as satisfactory as would have been the case had more space been allotted for our exhibits, and had circumstances been different. As it was, it is not surprising that many of the largest and most important arts and industries were but poorly represented. As regards the horticultural section, the secretary of committee Mr. LIONEL EARLE says that:

"The representation of horticulture at Paris was a matter of extreme difficulty. The committee interviewed some of the largest nurserymen and fruit-growers of England, and found that they were unwilling to incur the expense of exhibiting, as they had little trade with France or the continent. The fruit-growers added, that their trade with France had been killed by protective tariffs, and stated that, whereas formerly they used to grow considerable quantities of Grapes for the Paris market, they had now ceased to do so. The principal growers of fruit were invited by Sir TREVOR LAWRENCE to attend a meeting summoned at the Crystal Palace during the fruit show in October, 1899, and the chairman, Mr. VEITCH, and Mr. LIONEL EARLE, attended to see whether anything could be done to secure the proper representation of horticulture. Finding that the market-growers were not inclined to participate, the committee decided to appeal to private owners of large gardens in England, but this appeal also met with little or no response, and with the exception of the Kew exhibit, British horticulture was practically unrepresented except at one or two of the periodical shows." It is, therefore, not surprising to find most of our best known British firms unmentioned in the list of "Awards," but in the same section (horticultural) in the class for fruit and fruit-trees, it is gratifying to learn that, "there was no fruit during any period of the exhibition comparable to that of Canada or the United States in those sections in which they competed. Canada was the only British colony that exhibited fruit at the Paris Exhibition, and received thirty-one Gold Medals, four Silver, and three Bronze, and two Grand Prix. By far the finest flavoured fruits amongst Apples, Pears, Plums, Peaches, and Grapes came from the Crimea, Russia. Next to the Crimea came the French and the German, referring to European fruit only, Canadian and American would rank with

French fruit generally. Swedish fruit all lacked flavour. On October 10;—France exhibited about 7000 plates Apples and Pears; Germany, 500, and Russia 1000; Sweden, 37 sets of Apples, 10 varieties of Pears; Bulgaria, 52 Apples, and 4 varieties Pears. France also exhibited Grapes (open air) in great variety; Russia (Crimea) exhibited Grapes (200 plates) exceedingly luscious. There was a small Spanish exhibit, and also a small exhibit of Italian fruit, both very poorly displayed." It is to display and to proper management of exhibits that much success is owing.

"The British manufacturers," says one writer in the report, "are ever anxious for foreign trade, but they want to obtain it without trouble, and to force the foreigner to take what they make, instead of setting themselves together to make what the foreigner requires. . . . the Exhibition, so far as we Britishers are concerned, has been a complete failure—want of organisation, want of thoroughness from the beginning to the end. No taste was used in any section, even in the manufacture of cases and the putting together of them; whereas throughout the German sections it was easy to remark that an intelligible policy and action had been carried out from the commencement." With all these disadvantages, the superiority of some of our most ancient industries remains uncontested, and the productions unrivalled. "For strength, quality, and above all, for purity of bleach, the Irish linens are by far the best shown, and are unequalled by those from any other country." This should prove an inducement to still further develop the linen industry of Ireland, both in small hand works and in large factories, as the value of it is undoubted, and has long been known, whereas many other suggested schemes for Irish arts and industries are not yet advanced beyond the experimental stage.

OUR SUPPLEMENTARY ILLUSTRATION this week represents a beautiful group of the hardy Rhododendrons, or Azaleas as they are best known in gardens. Though these plants make a glorious effect upon slopes, and in other positions in the pleasure-grounds in districts where they succeed, their most common use is for forcing into bloom early in the spring. The economy of the plants, by which they store up during their period of growth the necessary material for their flowers, and develop the flower within the bud to such an advanced degree before losing their leaves, enables the horticulturist to force those buds into bloom at unseasonable times as easily, nay, more easily, than many varieties of bulbs. The trade in these Azaleas each year between this country and the Continent is enormous, the best varieties being raised in the neighbourhood of Ghent, Belgium. The group of plants shown in the photograph was exhibited by Messrs. R. & G. CRIBBER, Southgate Nurseries, London, N., at the Temple Show, in May, and was one of the finest exhibits of the kind we have seen in this country. A description of some of the varieties then shown was given in the *Gardeners' Chronicle*, May 25, on p. 2 of Supplement.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—On the 13th inst., by permission of Captain FORRESTER, the gardens and grounds of Battle Abbey, Sussex, were thrown open on behalf of this institution; 1,255 people paid for admission, and a sum of £31 7s. 6d. was obtained. The gardener, Mr. W. CAMM, has reason to be satisfied with the result of the efforts he has made.

BRITISH FERNS.—The magnificent collection of Ferns got together by the late E. J. Lowe, Esq., is to be disposed of as a whole or in

Separate lots by private contract or otherwise. Fern-lovers will not need to be reminded of the excellence and variety of the collection, nor of the superb condition of the specimen plants. Altogether, there are about 3,000 plants, and innumerable seedlings. Hundreds of Certificates, dozens of Medals, and two Challenge Cups, have been allotted to these collections. Fern-lovers should communicate with HUGH LOWE, Esq., Shirenewton Hall, Cheshire.

MESSRS. WATTS and BALLANTYNE, are we informed, have been appointed nursery and seedsmen to His Majesty, by Royal command.

THE HAILSTORM IN THE HAWICK DISTRICT, which is described in a letter on p. 138, Mr. FORBES informs us that the hail, or "rather lumps of ice," in some instances measured over 2 inches. It was the "most disastrous storm within living memory." Over 1000 panes of glass were broken in Mr. FORBES' nursery, while in the grounds plants and flowers have suffered to an alarming extent. Luckily the newest range of houses, which contained the stock of the new Begonia Caledonia, escaped with but slight damage. Although the storm was at its worst for ten minutes only, it continued for five hours, during which time the rain fell in torrents, and the thunder and lightning hardly ever ceased.

A FLORISTS' OUTING.—On the 3rd inst. the employes of Messrs. STEWART & Co., Florists, of Bayswater Terrace, London, W., had their first annual outing. The party proceeded in brakes to Ripley, in Surrey, a distance of about twenty miles, and a very enjoyable day was spent in that beautiful neighbourhood. The arrangements were carried out by Messrs. Wood and COOPER, the heads of the indoor and outdoor departments respectively.

FLOWERS IN SEASON this week include another consignment of Carnations. They are seedlings of the past two years raised by Messrs. R. W. PROCTOR & SONS, New Square, Chesterfield. The flowers include some very pretty and bright colours, but probably the earlier blooms would be larger in size than those we have received. Messrs. WEBB & BRAND, of Saffron Walden, send us some blooms of double Hollyhocks, which are doubtless nearly faultless from the point of view of the florist. We regret that they do not appeal to us quite so forcibly. They are much too symmetrical and ball-like, and the less orthodox flowers whose guard-petals being longer than the centre ones, help to relieve the rather heavy-looking flowers, are prettier. But the single Hollyhocks are more attractive even than those. The florists' double varieties, however, possess a variety of colours, and to those who like them, Messrs. WEBB & BRAND'S strain may be recommended. The flowers were obtained from plants raised from seeds sown in June last year. They were planted out permanently in August and September.

HOW TO SELECT PLANTS.—It is not enough to select, but we must select wisely. Mr. F. A. WAUGH, discoursing at the Western New York Horticultural Society about Plums, makes a remark that should be taken to heart as regards all plants. He says that "the selection of any single variety depends not merely upon what the variety is itself, but upon all the circumstances under which it is to grow. This is a fundamentally important and a very obvious principle, but one which has been repeatedly forgotten in horticultural dis-

ussions. This principle may be expressed by saying that no variety can exist or be judged separately from its environment. The two must be examined together. This rule is absolute."

MISSOURI BOTANICAL GARDEN.—We have received the Twelfth Annual Report of the Missouri Botanical Garden, and learn that various improvements are in progress, and others completed, and that considerable additions have been made to the herbarium. Scientific papers in the volume include those on: Disease of *Robinia pseudo-acacia*, by HERMAN VON SCHRENK; Crotons of the United States, by A. M. FERGUSON; An Undescribed *Agave* from Arizona, by J. W. TOURNEY; A *Crataegus* Peltata, by WM. TRELLEAVE; A Pacific-slope *Palmetto*, by WM. TRELLEAVE; and Garden Beans cultivated as Escallons, by H. C. BRUSH, and already referred to. Illustrations other than those peculiar to the articles are those of: A Great Sleet Storm; A Winter Scene; Among the Aloes; The Octopus Plant; and, A Group of Iris. These add much to the attractions of the publication.

OVER-SEA FRUIT CROPS. A glance over a goodly number of Canadian fruit-crop returns show, in small fruits of various kinds, a complete failure. Apples appear to be a failure in Ontario; there seems a better outlook in the western districts. From the United States reports, it would seem that the recent heat wave has played a disastrous part. There has been a general decline in Apples and Peaches as compared with the previous report; almost every important Peach-growing State has the promise of over an average crop, but in the Apple-producing States the crop will be generally poor. The condition of Grapes is excellent.

MESSRS. HOGG & ROBERTSON, seedsmen, Dublin, whose exhibits of Tulips, Daffodils, and other bulbous flowers, have elicited much attention in this country, have been honoured with the Royal Warrant of appointment of seedsmen to His Majesty the KING.

ARCHBISHOP GOETHALS.—Indian papers are mourning the death of the Roman Catholic Archbishop of Calcutta, who was an enthusiastic gardener, and an active member of the Agri-horticultural Society since 1878.

MR. PETER BARR has earned for himself a new cognomen. We long ago hailed him as the Daffodil King; now we must liken him to PETER the Hermit. As each mail comes in, we read of his fervid praises of the Daffodil—now in the States, now in Japan, in Eastern Australia, in Western Australia, in New Zealand. Really, if we shortly hear of him lecturing on the Daffodil from the deck of the *Discovery*, within the Antarctic Circle, we shall have no reason to be much astonished. What is surprising is the vitality of the man, his freshness, his zeal, his enterprise. After an active and successful business career, he might fairly claim well-earned repose; but that is not his view. To go everywhere and see everything—many do that; but PETER BARR does more—he contrives to do good wherever he goes, and the hospitality of our colonists is amply repaid by him.

STOCK-TAKING: JULY.—In the past month there were four Sundays—in July, 1900, there were five; and this to some extent influenced the total of the imports. Last month's total was £16,928,822—that for July in last year £10,261,167. This an increase to be recorded of £2,761,655. Duty-free articles of food bulk largely in this increase.—Wheat from Australia and India, from America and elsewhere.

Strange to note also, Russia helps to swell the list with a large supply of butter, though Denmark still leads the way. The following are a few excerpts from the "Summary" table in the Trade and Navigation Returns for July:—

	IMPORTS		Difference
	1900	1901	
	£	£	£
Total value	14,244,347	16,928,822	+2,684,475
A. Articles of food and drink duty free	11,985,875	14,371,242	+2,385,367
B. Articles of food and drink dutiable	2,258,472	2,557,580	+299,108
Raw materials for textile manufactures	3,229,569	4,399,417	+1,169,848
Raw materials for other industries and manufactures	6,711	6,575,552	-68,441
A. Miscellaneous articles	1,996,311	1,344,296	-652,015
B. Parcel Post	14,111	104,294	+90,183

We ought not to omit mentioning that Sugar has kept Tea company in the decline of entries for consumption the former especially, and principally in the German article. The figures for the items of fruits, roots, and vegetables are as under:—

	IMPORTS		Difference	
	1900	1901	Cwt.	Cwt.
Fruits raw	6,375	18,933	+12,558	
Apples and Peaches	5,125	8,325	+3,200	
Bananas and pineapples	55	269,280	+269,225	
Cherries	100	77,500	+77,400	
Citrus fruits	1,125	58,911	+57,786	
Cucumbers	7,500	6,534	-966	
Grapes	18,750	20,300	+1,550	
Lemons	20,250	115,500	+95,250	
Nuts, Almonds	1,125	3,876	+2,751	
Other seeds and cereals	2,125	56,126	+54,001	
Oranges	1,125	28,387	+27,262	
Pears	2,625	14,814	+12,189	
Plums	1,125	69,116	+68,000	
Strawberries	1,125	7,927	+6,802	
Unenumerated	1,125	15,968	+14,843	
Fruits dried	1,125	1,125		
Cocoa beans, raw, unmanufactured	1,125	29,533	+28,408	
Essences, oils, &c.	14,125	11,987	-2,138	
Vegetables raw	1,125	1,125		
Onions	1,125	185,976	+184,851	
Potatoes	1,125	74,384	+73,259	
Tomatoes	1,125	186,525	+185,400	
Vegetables, raw, unmanufactured value	1,125	434,515	+433,390	

The value of the imports for the past seven months is £205,596,327, against £295,899,033 for the same period in 1900—an increase for 1901 of £9,607,291. Coming, now, and briefly, to—

EXPORTS.

These amounted to £21,355,771 for last month, against £21,559,557 for July in 1900—a decrease of £203,786. A greater decrease was looked for, but a rise has taken place in sundry exports to the East. The value of the exports for the past seven months is £163,182,169, against £168,927,321 in 1900—thus showing a decrease of £5,745,152. We can only hope for the lowering of this deficit as the month goes on.

A NEW DICTIONARY.—We have received intelligence of a new trilingual technical dictionary or technolexicon in German, English, French, which is to be published by the Society of German Engineers, Dr. HUGERT JANSSEN is the editor, and his business address is 49, Borothenstrasse, Berlin. Circulars have been widely circulated asking for the co-operation of societies, authorities, establishments, &c., to furnish the names

of contributors qualified for the work. Each of these contributors or collaborators "will do well to begin by collecting the technical words and expressions of his speciality (or specialties), giving the source of each. Besides, his interest in the good cause will induce him to note down all other technical words and expressions missing in his dictionary that occur to him in his every-day work, or that he hits upon in reading." It is desired that those who collaborate will collect the words and expressions in a special notebook; that other helpers will refer the editor to technical dictionaries already existing, and that yet others will send their "price-lists, catalogues, business announcements, newspaper advertisements, &c. . . . If these societies, associations, &c., after having been applied to by us, do not in time endeavour to obtain the active assistance of firms . . . it will be utterly impossible to avoid gaps in our technolexicon." It will be noted that the wording of the circulars is not very happy, as it infers an obligation on the part of the "collaborators." Instead of this being the case, it is business men and craftsmen in every department who are asked to devote gratuitous labour to the perfection of a technolexicon. No doubt a trilingual technical dictionary would be a valuable work to future readers, and we hope that the editor and his kindly assistants will succeed in compiling one that shall be of standard utility.

THE RAMSEY ABBEY GARDENS.—The Ramsey Abbey gardens (Huntingdon) have never looked better than they have this year, and the presiding genius, Mr. SKARROOK, has every reason to be proud of his handiwork. One of the most promising effects is the training of Turner's beautiful Crimson Rambler in the Acer Negundo variegatum. Another very pleasing picture has been produced by combining the purple Clematis with the Acer Negundo. The beds of flowers have all been laid out artistically, and with good taste. One of the most effective beds has a ground of *Heliotrope*, Madame de Bussey, edged with *Polygonium* West Brighton Gem, and dotted with standard *Polygonium* Vesuvius. Another bed that instantly attracts attention has a groundwork of *Polygonium* Manglietia, edged with dwarf *Ageratum*, and dotted with *Calceolaria amplexicaulis* and *Fresia* Lindley. Then there is another plot very pleasing to the eye; the groundwork of this is of *Petunias*, with standard *Aloysias*, edged with *Festuca glauca*. Amongst other beds, the following are worthy of mention:—One with a groundwork of *Polygonium* H. Jacoly, edging of Mrs. Mappin, with dot plants of Golden Privet and Greyville; another with a ground of Atkinson *Polygonium*, edged with *Alyssum maritimum* and dot plants of Acer Negundo variegatum and *Ricinus embogiensis*; another set out with the Ivy-leaf *Polygonium* Madame Crousse, with edge of a light blue *Lobelia*, and dot plants of *Encalyptus* and *Ricinus embogiensis*. The Roses, dwarfs, standards, and climbers, can be numbered by their thousands; while thousands of Carnations of the new-west and choicest of varieties are blooming in all their glory. A grand show is also made by about 12,000 dwarf *Antirrhinum*s.

DOUBLE GYPSOPHILA.—Flower-botanically interesting double flowers may be, it is rarely that they exceed in beauty the single flowers. There are exceptions to this rule, and there are reasons why double flowers are sometimes preferable. The double *Gypsophila* shown lately by Messrs. D. S. THOMSON & SONS, Wimbledon (see p. 101), is excellent for bouquet

work and decorative arrangements generally. For these purposes it has all the advantages of the single form, with the additional qualifications of fuller flowers, which last longer in beauty. The flowers are interesting structurally; the sepals and outer petals are normal. Within them is a crowd of petals, some of which represent stamens, and here and there is a perfect stamen. From the axils of the sepals spring short stalks bearing secondary flowers, of the same structure as the primary one; the ovary styles and ovules are normal. The flower is thus not only doubled by the addition of supernumerary petals, but "proliferated" by the development of secondary flowers within the primary one.

PUBLICATIONS RECEIVED.—*Annual Administration Report of the Forest Department of the Madras Presidency, for the year ending June 30, 1900.* "The season was generally adverse to natural reproduction, and many failures and disappointments in cultural operations and experiments have to be ascribed to the drought. . . . The total amount of forest produce extracted was greater under all heads than in the previous year. . . . The Government notes with special satisfaction the measures taken to extend and promote the growth of trees and shrubs, the leaves and twigs of which are used by the ryots for field manure. . . . Satisfactory progress was made in settlement work, and also in the preparation of working plans; steady attention was paid to meeting the requirements of the people, and reconciling their wants with the restrictions necessarily imposed by effective conservancy; while a considerable revenue was realised in excess of expenditure. All these circumstances testify to the general good management and work of the department."

BOOK NOTICE.

THE STORY OF WILD FLOWERS, by Rev. Prof. Henslow. (George Newnes.)

IN pre-Darwinian days, it was too much the custom to make collections of wild flowers, count their spots, measure their hairs, and investigate their more prominent characteristics, then to dry them and put them away in their appropriate pigeon-holes in the herbarium. Even from these imperfect methods of study, great enjoyment was obtained by those who had a fancy for plants; and the eagerness with which a plant more interesting than usual was lighted on in the course of a ramble, afforded a degree of pleasure which the modern laboratory botanist cannot appreciate. It is certain, also within limitations, that a better knowledge of plants in general was obtained than is the case now. A man may be familiar with the variations of fibro-vascular bundles, or the intricacies of karyokinesis, and not be able to recognise the genus, perhaps not even the order, of the first weed he comes across. Still, it must be admitted that our predecessors had not much insight into the significance of the structures they examined, and were fond of referring the varying conformations to some ideal type which they borrowed from Goethe, or some other transcendentalist. They did not sufficiently realise that the type had no real existence, and that they were co-relating the appearances they met with to an intangible abstraction, rather than attributing them to the variations of a living being capable of being influenced by external circumstances,

one moreover inheriting its characteristics from a long line of ancestors.

The use of the word "families" is sufficient to show that our predecessors did not altogether overlook the facts of consanguinity and genealogical descent, but in any case, the full meaning of the "natural" system was never so clearly shown in pre-Darwinian days as it is now. The late Mr. Grant Allen did good work by directing the attention of the lay public to the life-history of plants, but he often allowed his imagination to outrun his facts, and was apt to treat assumptions as if they were demonstrated truths. From this point of view Professor Henslow is a more trustworthy teacher. He does not, as he often tells us, believe in "natural selection" as an agent in the production of new varieties and species. Indeed, the term natural selection has always seemed to us unfortunate. Substitute for it a capacity of adaptation to varying conditions, and some, at least, of the difficulties attaching to the idea of selection disappear.

Mr. Henslow's present book, to a large extent, deals with those adaptations as they are presented to our notice in the plants of our fields and hedgerows. The ways and life-habits of roots, leaves, tendrils and flowers are touched on, and plants that climb and plants that consume insects and do other things, once considered marvellous, receive attention. They are still marvellous enough, no doubt, but now that they are recognised as phenomena pertaining to the plant as a living organism of precisely the same character as an animal, they fall into line and order as regular manifestations of the energy of living beings, and not as something apart and proportionately inexplicable.

From this point of view we may take exception to the word "freaks," as used in Chapter xvi. There is really nothing freakish in the ordinary acceptance of the term about the malformations of plants. If we did but know the reason why, we should no doubt find them as much the result of law and order as any other variations of structure. A chapter on the evolution of kitchen vegetables is a novelty in a book of this character, but one that may be highly commended. A similar chapter on garden-flowers would cause many to take more intelligent interest in their plants, and in their gardens, than they do at present.

It will be seen that the ground covered by Professor Henslow in a popular book of some 250 small pages is very extensive, too much so to permit of anything like adequate treatment, but it is well calculated to arouse interest and stimulate curiosity—the first requirements for an intelligent appreciation of *The Story of Wild Flowers*.

VICTORIA PARK, TIPTON.

ON Monday, July 29, a public park, 33 acres in extent, was opened at Tipton, in Staffordshire, by the Earl of Dartmouth. The park was designed and the work carried out by Messrs. William Barron & Son, of Elvaston Nurseries, Borrowash, whose plan we reproduce at fig. 13.

The site was composed entirely of old coal-pit mounds. Seven disused pit-shafts had to be either filled up or bricked over; and as one of these occurred in the centre of the lake, which is 4 acres in extent, many difficulties had to be overcome.

A cricket ground of over 5 acres has been made; also a lawn-tennis ground and bowling greens.

HOME CORRESPONDENCE.

A FINE CAMPANULA.—What was, I think, by far the finest specimen of that beautiful and popular hanging pot-plant, *Campanula isophylla alba*, I have ever seen, and perhaps many others also, was hung at a small show held in the school of South Park, Reigate, recently. The plant was in a 9-inch pot, and was so finely furnished with foliage and flowers all round, and to a depth of 2 feet, that it had a circumference of 6 feet. A finer object to stand in a garden on an Ivy or other creeper-covered pedestal could hardly be conceived. The exhibitor was a Mr. Durrant, a local amateur, who had every reason to be proud of his very perfect and beautiful specimen, A. D.

HYBRID SUNFLOWERS.—Mention is made on p. 120 of a supposed hybrid between *Helianthus annuus* and *H. rigidus*. I wish the same hybridiser would try to cross *H. annuus* and *H. decapetalus*, and tell us the result. I have always believed that the Sunflower known as *H. multiflorus* originated in this latter cross. We have at least four varieties of it in cultivation; all are entirely barren. At least for twenty years or more I have searched and inquired in vain for a fertile seed of *H. multiflorus*. The single form is said to have been introduced from North America in 1699 by Lord Leinster. A double form was in common cultivation in the eighteenth century. Miller, in his Dictionary, calls the plant "the single perennial Sunflower." Asa Gray says it undoubtedly belongs to *H. decapetalus*, a species producing fertile seed plentifully in cultivation; but between the largest *H. decapetalus* and the smallest *H. multiflorus* is a wide interval without intermediate forms. Both flowers and leaves of *H. multiflorus* appear to be between the two suggested parents, *C. Watley-Dod, Edge Hall, Malpas*.

FLOWER-SHOW TENTS.—In respect to the note on p. 119 in the last issue, I may say that some years ago I was at a horticultural show where the tent had but one opening, the heat was so intense that the plants and flowers were drooping and withering under it. An appeal was made to some of the members of the committee to open the tent on the opposite side, but they declared the remedy would be worse than the evil, that it would cause draughts, and that people would not be able to enter without catching cold or being blown off their feet. Two of the exhibitors then took it upon themselves to open the tent on the opposite side. Within half an hour the tent was cool, the plants had ceased to flag, and the flowers had revived, notwithstanding that the power of the sun was still increasing. *Outlook*.

STRAWBERRIES AND MELONS AT FARNLEY HALL.—In my note upon the Strawberry crop, see p. 110, I was writing of the locality generally. Our plants were nearly all young. On July 23 I gathered the finest fruits I ever have gathered during the last fifteen years. They numbered fifty, ten of which weighed 16½ oz.; the largest fruit was 8½ inches in circumference. I was awarded 1st prize at Tadeaster Show. The fruits were picked from plants which were forced in 1900 (spring), eventually planted out under a north wall. Though we had not what might be termed a heavy crop, we were gathering handsome fruits for dessert, generally twice a day for a period of about five weeks. The variety alluded to above is Royal Sovereign. I would like to know what is the record weight for the same number of fruits. What is the average weight for two Melon plants to carry? I may say that I have cut 60½ lb. from two plants; eleven fruits in all, heaviest 6½ lb. These plants were grown in a box about 3½ feet by 2½ feet. *Ans. Small, Farnley, Otley, Yorkshire*.

MANURING STRAWBERRIES.—On p. 119, there were some remarks by Mr. Thorne, who does not believe in manuring Strawberries at this

time of year. I venture to say that here, if I did not annually manure our Strawberry plants as soon as the crops are gone, and the plants cleared of old leaves, we should get very little fruit. All growers know that the plant must make fresh growth and roots for the following year's crop; and with soil like ours, which is moderately heavy and very strong, we should get poor crops unless we well manured the plants now. The only growers that I would advise not to manure at this season are those who have a light soil containing much nutritive matter. In such cases too much rank growth would be made. I may add, that our Strawberries always open well, my sorts are Vicomtesse, Royal Sovereign, Sir Charles Napier, Monarch, and Latest-of-All. A. J. Long, Wyfold Court Gardens.

wall were more or less open, so that soil could be added freely to a depth of, say, 18 inches, such would be the freedom given for root-action that any wall, provided it received some skilled attention till the plants were established, could be made to grow many plants as well as they succeed in the border, while others would do even better. I place some emphasis on this, for the simple reason that the more depends on the structure itself, the amount of soil available for the plants, and the subsequent care in attending to the plants, than in the mere operation of planting. "Stonecrop" says he is going to place "bricks on edge" on the top of the wall; and it is to be hoped it is to be more than one brick deep, for the soil will be far too shallow, and become very dry. I would

S. nepalensis, &c.; *S. lingulata*, *S. Aizoon rosularis*. These four constitute the best of the crustaceous species for this kind of work. If another was desired I would name *S. cochlearis*, a rather scarce but very charming plant. These all have plumes more or less of white flowers, exquisitely dotted with brown or dark orange spots, and colonies of them are most attractive. Of the *S. onocrotogonis*, none are better than *Sodium spirium* in all its forms, *S. grandiflorum*, and *S. oppositifolium*. And of *Sempervivum* I would specially urge in favour of *S. arachnoidum* and *S. a. Liggeri*, more for the unique effect of their wobbled masses of rosettes, than for any effect in flowering. These are beautiful when given monks or corners where they may cluster together at will. Of other plants, the entire genus

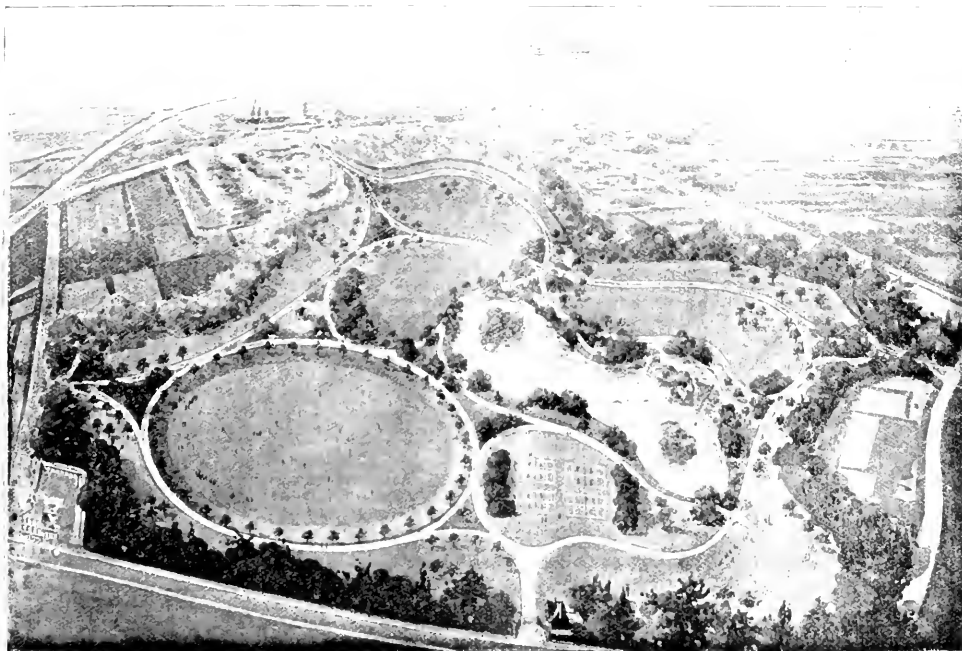


FIG. 14. PLAN OF NEW PARK AT DEPTFORD, KENT (SEE P. 135.)

WALL GARDENS.—A correspondent, "Stonecrop," at p. 119, seeks information in respect to this phase of gardening. Too frequently the positions where walls could be erected to grow many plants with perfect success are occupied otherwise in the garden; while not a few of the walls that are "specially erected" for growing these plants are utterly inadequate for the purpose. In the instance described, however, there appears to be sufficient room on the summit of the wall, and the wall is available on both sides, as well as the top. It is to be regretted that your correspondent did not give the height of the wall. If there is not room for plants that trail long and freely, the wall is robbed of one good feature. Your correspondent only asks for "a score of the most beautiful alpine and rock plants suitable for such a position," without stating what the "position" is; nor is it stated what depth of soil is likely to be afforded at the top. This last is the more important item, because one cannot but infer that the wall is of ordinary build, and therefore solidly composed through and through. If the centre of the

suggest that the opportunity be now taken of removing some of the central parts of the wall, so that the cavities formed may be charged with soil. Such a proceeding, provided the height of the wall permits, will be much better than building too much on to top of the present erection; and "bricks on edge" are not picturesque. The whole subject is so interesting when it is well carried out, that the matter of the walls and their building should be controlled by the planter to some considerable extent, and in the case of new erections this is quite possible. Much depends also on the aspect, as this will influence the plants considerably in respect to moisture. I will endeavor to supply a list of plants that will best supply the rather exacting conditions of "Stonecrop." These are "most beautiful," "perfectly hardy," "flower very profusely," and are "brilliant or attractive in colour." It is scarcely likely all these requirements will be forthcoming, and what will be beautiful to one is often lightly regarded by another. However, some of the most suitable of wall plants are included in the list below. *Saxifraga longifolia*, *S. corymbosa*, often called

Aubletia, suggests itself as among the best of trailing and trailing plants. All are good spring flowering, and give rare masses of colour, rich and pale violet, blue, rose and reddish tints. The yellow *Alyssum*, the rose coloured *Speranaria nemorosoides*, the soft velvety masses of *Troximus lanuginosa*, the alpine *Phloxes*, and especially those nearest allied to *P. setacea*, with *P. verna*, and *P. divaricata*. Then again there is nothing finer than *Aubretia lanuginosa*, and with its trailing profusion of rose-pink flowers for three months in succession, is much the best of the free-growing kinds. *Draba aizoides*, yellow; *Ehrharia* thus *distans*, and *E. serpyllifolia*, blue; *Onosma latifolia*, golden yellow tubular flowers; *Corydalis lutea*, *Zauschneria californica*, *vermillion-scarlet*; *Campanula muralis*, pale blue, a gem; *C. sarragenia*, C. g. alba, blue, and pure white. *Erodium* in variety all are good; *Veronica prostrata*, blue, *Theris* or *Candytuft*; these are white-flowered, but certainly must figure among hardiest and best. *Dianthus caryophyllus*, *Avicula microphylla*, crimson, &c. In addition to the foregoing, there are among the more minute growing plants, some beautiful

species of the early Saxifragas, and the like for which corners could be found, or even arranged in masses. For all the foregoing, a good and sandy-loam would be suitable for the majority, while such as Saxifragas, Scempervivums, Sedum, Dianthus, may be assisted with the addition of old mortar with the soil. As to planting such places there is no better time than early autumn, say October; if the plants are well established in pots, they may be planted from September to end of March, provided daily attention is afforded them in respect to watering, &c. But for the majority the early autumn is preferable. E. H. Jenkins, *Hampton Hill*.

THE YARROW ON LAWNS.—There can be no doubt but that the past three or four hot, dry summers have very greatly favoured the growth of this weed on lawns, as in many directions now one sees it displacing grass so much that the verdure is far more that of the Yarrow leafage and much less that of grass. Those who may contemplate the making of new lawns, whether by means of turves or by sowing seed, should be most careful to see that, in whichever way, the most careful piece of the Yarrow found is ruthlessly exterminated while yet young. Care should also be taken that this very common wild plant is not allowed to flower in the vicinity of lawns. When first in evidence it is well to expend some labour in extracting the roots, in putting some fine soil over the places thus made bare, and in sowing good pasture seed, also to top-dress liberally with soot, basic slag, and sulphate of ammonia, so as to give the grasses every possible help. The use of a coarse iron rake over the Yarrow patches helps to keep them in check, but it is a case in which once the enemy gets a foothold it is very difficult to expel him entirely. A. D.

THE PROPERTIES OF THE SWEET PEA.—Every member of the National Sweet Pea Society will appreciate your references on p. 94, to the Society and its work. As the committee undertake to deal with seedlings, and did indeed do so on the first day of the exhibition at the Royal Aquarium, it may interest lovers of the fragrant flower if I give the part culms of a standard of properties the committee have drawn up and adopted as a basis for the future. So far the properties constituting quality in the Sweet Pea have not been defined, and the committee of the National Sweet Pea Society which is composed largely of Sweet Pea experts, have, as a guide to their own proceedings laid down the following points as criteria in estimating the value of a new variety. 1. *Form*.—The standard must be erect, waved, or only slightly hooded. The standard, wings and keel to be in such proportion to each other as will constitute a harmonious and well-balanced flower. 2. *Number of Blooms on a Stem*.—No variety shall be recognised that has not at least three blooms on a stem, gracefully disposed. 3. *Colours*.—Distinct and clear self-colours are most to be desired, and therefore striped, watered, and edged flowers will not be awarded certificates, of merit unless they present quite new or remarkable combinations. 4. *Exceptions*.—Perfectly distinct new colours, such as approaching the line of *Sylvia patens*, the yellow of *Cassius grandiflora*, or the scarlet of the *zonal delavandora* shall be recognised, even if the variety should fall short of the foregoing properties. The committee insist upon all seedlings submitted to it being named, in order that a record of the variety may be made for future reference. R. Dean.

THE SEASON OF WASPS. We have destroyed some dozens of nests in and around the gardens here without making any apparent difference to the great numbers which are attacking not only all kinds of fruit, but spoiling Fuchsias and other flowers. We have found the nests three and four together within the space of a few yards. To destroy them we use turps or tar, the former, though more costly, being most effectual. One gill is sufficient to destroy any nest where the formation of the

hole will admit of its reaching the comb. This must be done at night, when the wasps are all at home, and there is no further need to dig out the nests. We only use cyanide of potassium in very difficult cases, where turps or tar cannot be poured in the hole leading to the nest, for it is dangerous where there is poultry or life-stock of any description. I was told the other day, at a large garden not two miles from here, they had not yet been troubled much with wasps. *William Wilkins, The Gardens, Whitley Abbey, Coventry*.

—As you suggest, on p. 111, I think Mr. Simpson's experience must be a record. We killed some dozens of queen wasps, this season as usual, but wasps are still numerous, though they do us very little damage, being kept down in the following manner: I boil 1 lb. of commercial arsenic in 1 gallon of water for 20 minutes, then boil it. Half-a-pint is put into a wide-mouthed bottle, adding sugar to make it syrupy, also a little beer. The mixture is put into any pieces of glazed crockery that will hold a spoonful or two, and fragrant of fruit, if any, put in and sprinkled. They seem fonder of curran than fruit, so pieces of flesh or fish will answer, cooked or uncooked. Last year the wasps attacked our Cherries. Smudgy broken crockery were placed on the top of the wall, and replenished daily with the mixture. In three or four days not a live wasp was to be seen, but numbers of dead ones were on the top of the wall and on the border. This year it is the Gooseberries they have attacked first, but they are kept down, and as soon as a wasp is seen in the vinery it is my practice to provide some of the mixture, and I would not hesitate to undertake to keep them down in any garden by commencing in time. We have a number of Vineries here, but I do not lose a score of berries in a year—and very little else, since I adopted the above method. *Wm. P. Roberts, Chestnut Hill, Preston*.

TREE AND PLANT LABELS. Mr. Harrison Weir and other writers on this subject overlook the fact that most fruit trees travel by rail from the nursery to the buyer. If metal labels were wired to each tree before being tightly drawn together in a bundle, the trees would be cut and marked in all directions by them. We always advise our customers to order "Aene" labels at the same time as they do the trees, and attach them when planted, though this may be done at any time within the first twelve months, now that the name of the tree as well as that of our firm is printed on the temporary labels. *J. R. Pearson & Sons, Chiswell Nurseries, Loudham*.

TERRIFIC HAILSTORM AT HAWICK, N.B.—This part of the country was visited with a most terrific hailstorm on Saturday, Aug. 10, accompanied by a heavy thunderstorm, and followed by deluges of rain. The hailstones were in many cases as large as marbles, causing the sewers in the town to get choked, with the inevitable result of flooding in the lower parts of the town. The damage done to growing crops is incalculable. Vegetables of every description are broken and smashed to a pulp, and bedding plants are completely ruined. Where flower-gardeners looked gay on Friday, there is nothing but destruction. Fruit trees have suffered severely. Apples and Plums are strewn on the ground in wholesale fashion, and late Gooseberries and Black Currants are beaten into the earth. The glasshouses are entirely ruined. The Buchloch Nurseries, belonging to Mr. John Forbes, have suffered worst in this respect, whole houses being left with scarcely an entire pane of glass, and the damage done by falling glass is very great. The plants in the outside nursery are entirely wrecked. Wilton Hill Nurseries, owned by Mr. George Wood, are no better, whole houses being destroyed here also. Allotment gardens, of which there are several hundred, have undergone the same treatment, and the glasshouses

belonging to the amateurs are all destroyed. The gardens here present a pitiful sight, and we have a quantity of glass broken in the greenhouses. The hailstorm occurred only in a small area extending a few miles. *R. Turnbull, Striches Gardens, Hawick, N.B.*

SOME HERESIES NOT PROVEN.—In reply to "C. P. C.'s" remarks on p. 119, I beg to say that the inference drawn by your correspondent, "W.," in the issue of the *Gardeners' Chronicle* for July 27, p. 78, is a practical and reasonable one in the circumstances indicated in his communication. Last year the Grapes in a large vinery here were practically grown and ripened in a cool-house, and four rows of 1-inch hot-water pipes which existed were not used. This house (200 feet by 25 feet) is planted, the first half with thirty-four Canon Hill, twenty Muscat of Alexandria, six Madresfield Court and Black Hamburg canes; the second half being planted with Black Alicante, Gros Colmar, and two Vines of Apple Towers, and one of Lady Hunt. All the varieties mentioned ripened their crops satisfactorily enough. In the *Gardeners' Chronicle* for September 15, 1900, will be found a letter describing in detail the conditions under which the crop was grown, and it proves that the above-mentioned Grapes may be grown and ripened in a cool vinery in seasons like those which we have experienced during the past four years. This year my Grapes are also ripening satisfactorily in the same vinery in which no hot-water has been turned on in the pipes since the early part of March, 1900. Of course, where a regular supply of ripe Grapes has to be placed on the table by a certain date in May onwards, fire-heat must be used. In conclusion, I may be permitted to repeat what I have stated in my letter published in the *Gardeners' Chronicle* for September 15 last, as already stated, namely, that my vinery was treated in the matter of ventilation and moisture entirely in accordance with the requirements of the Tomato-plants planted therein, as well as the thousands of young plants grown on in pots and boxes for planting out-of-doors by the end of May and early in June; abundance of fresh air being admitted to the house day and night in order to promote and maintain a sturdy growth in the plants, and at the same time to harden them off preparatory to removing them out-of-doors. As an old grower, and a successful exhibitor of Grapes and other choice fruits at the leading metropolitan and provincial shows, my last five years' experience leads me to say that equally good, if not better, results may be obtained through using less fire-heat, and by admitting more fresh air in the process of forcing. *H. W. Ward, Rayleigh, Essex*.

POPPLES.

Few people seem to fully realise the decorative properties of these flowers—in all ways various, both in flower, foliage, growth, habit, time and season. Beloved by the poet, and by them and others used as descriptive of dream-like reveries, or for its pain-assuaging or ameliorating virtues; while that of a certain line is said to be "a poppy-red," this would doubtless most generally be in allusion to our "field Poppy" (*Papaver Rhæas*), and not less so to our garden species, *Papaver orientale*, and perhaps the larger more crimson bracteatum. What a grand show these latter make in the fresh spring-time, the sweet of all the year! From a slight eminence look down on a hundred or so of these in the full bloom of their vivid beauty, and as they catch and bend with the breath of the "May"-scented breeze, they flare and flicker like a sea of fire. Descend, as I have done, and take any individual flower, and if the sun shines, what a marvel it is, as its petals "be abroad," to catch the warm, life-giving rays. In the centre are the black stigmas, blue-black at the lightest, and these set in a blacker bed, made by

the bases of the scarlet petal surroundings. "What flowers!" "What foliage!" How the Mulberry-leaf green helps to add splendour to the highest-stem-supported flower! Then there are those black blotchless, orangy-scarlet throughout, some to a crimson more inclined, but in a way, all scarlet, a blaze of floral beauty, strong in its powers of self-assertion, and like it, too, none the worse for being, as such should be, short-lived; for even beauty tires that hath no change. So pass we on with the gathering lightful days, to newer lives and other sweet engagements. Now it is the refined, the elegant, the tender blossom, fragile modest beauty of the love-tender and love-reared Shirley Poppy, the peerless peer from the lowly-born, the child of "selection" allied with "culture." This, unlike the former, must be, or should be, closely viewed. It can be looked on without the stand-point rise, though not of the four-foot giant height, it is scarcely a dwarf, and when in clusters, and clothed with its "all different flowers," its

early morn adds a new joy to the garden-lover's happiest hours. If the man who could make two blades of grass grow where there was only one before was a public benefactor, then what shall be said of the Rev. William Wilks, the creator of the Shirley Poppy, of whom John Ruskin wrote that "it added another and a new pleasure to life."

And now to the old garden Poppy (*Papaver somniferum*), which country folk call "The July." Here is another high order of beauty and art tutoring a plant of singular attractiveness, even its very foliage azure-grey, as it is of curious almost fantastic forms differentiates it from all else. In the garden it takes its place as something apart from the other plant life. Its manner of growth keeping, by contrast, to the observation of those far less pretentious, but when in bloom its floral grandeur is superb. Just now I can look on in my little "home of flowers," scattered in one, two, three, or grouped a hundred and more, in the full bloom and pride of youth and beauty. For manifold

description, too grand and glowing for the painter's art. Here I must leave them, one and all, to the reader's most vivid imagination, which should be great, strong, and lasting. *Harrison Weir, Poplar Hall, Appledore, Kent.*

DELPHINIUMS.

The two varieties of Delphinium illustrated in fig. 11, were shown by Messrs. Kelway & Sons, Langport, Somerset, at a meeting of the Royal Horticultural Society on July 2.

The single flower, Dorothy Daniel, was more than two inches across, deep purple in colour, with creamy-white centre, and the Floral Committee recommended the variety an Award of Merit. Though not included in the "Award" list on that date, the variety William Kelway, with double flowers, is very admirable. In colour, it is a delicate shade of mauve and light blue. Each of the varieties is well worthy to represent its section of these useful border plants.

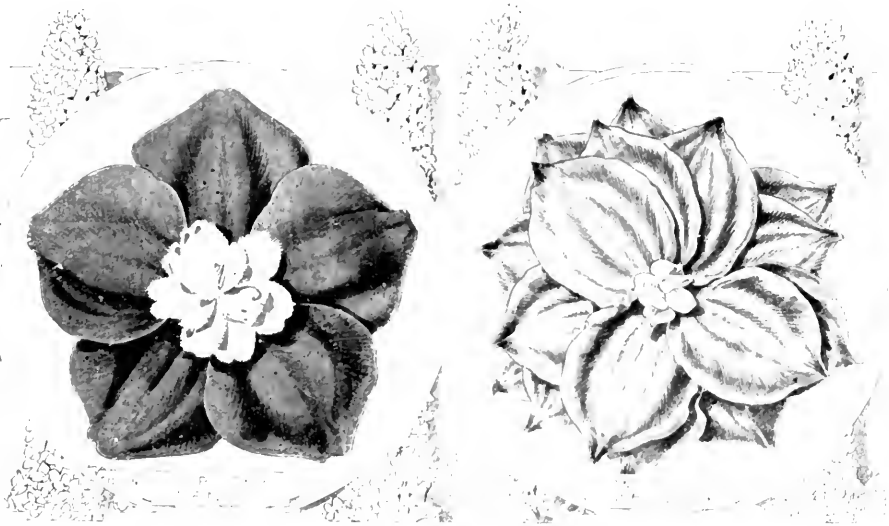


FIG. 11. TWO CHOICE DELPHINIUMS.

beholding is a luxury to the sense. And all this loveliness, all this varied colour, and colour markings, came and has come from the humble and too often despised red field Poppy (*Papaver Rhoeas*), and this, because it was "trained up" in the way it should go, through the appreciative will, persevering energy, vigilance, and unresisting zeal of one who designed "a new delight," a reflective pleasure, a noble beauty, and "made it." Look at a bed of these "Shirley Poppies." Their variety baffles words to describe, and the florist's hand that fashioned outvies the painter's art. They must be seen, and even then their rarity of delicate lines, tints, and markings, seem but as handlings of others; view the master-hand in colouring and moulding. Extraordinary are some of the blendings, these even unthought of times since are realities now. One of a clear scarlet, with blue-grey stigmas and stamens, and each petal entwined with a grey edging. Was ever such combination seen before? And now there are hundreds whose blossom to watch for at

top and colour the sight is magnificent, and dwarfs description. There in the hot sun, with uplifted heads, in the full glare, or in the more restful light of dewy eve, or in the hazy glomming; it is all the same to their many-coloured, never ending beauties. Gorgeous at all times, the eye revels and the senses more than delight in their magnificent beauty. What art-endeavour are these to Nature grown, while their dazzling floral brilliancy is beyond compare! One can only gaze in pleasurable wonder. There is the almost black, many-petalled, deep and sombre; the glowing scarlet, carmine-blooded, by its side softer tinted orange-red, like a ball of fire; then lavender, again a more varied scarlet, some purple, crimson, many of the rose's hues, some salmon shaded, these in tender vegetation to the pure and lovely white, all rounded or long petalled, and full doubled, even to almost bursting. Still, in the quiet, early morning, they stand as if conscious of their transcendent beauty, each and all "a thing of beauty," ones seem, to be "a joy for ever." Beyond

HAMPTON COURT.

The BRASSIA. In these fine gardens, so well managed by Mr. J. Gardiner, the public may enjoy such a varied display of flowers as very few wealthy estate owners can boast. Mr. Gardiner informs us that practically the whole of the 131 large beds which are in the chief combination have to be changed three times a year, viz. in spring, summer, and autumn, and the broad border under the wall, which is one of the finest borders of its kind in the country, and which is 600 yards long, requires continually re-arranging in one part or other, although a certain proportion of the plants are hardy perennials. In the gardens this year several important facts are noted. For example, it is shown that this year is a very fine one for Roses, which during all the long period of dry, hot weather, made a grand display in all parts of the garden. With the rains came a check, but the prospect of a fine and long display, extending into the winter, seems assured. The

Clematis also, which in some previous years went off here and there in the most unaccountable manner, have this year borne gorgeous displays of bloom, some of the plants which had seemed to die last year, even before the flowers expanded, being as good this year as those previously unaffected. Flowering Clematis outdoors are finer than usual this year, and some of the rarer shrubs, which usually flower but sparsely or not at all, are this year blooming profusely. The best example of this kind is a large and finely-formed tree of *Kohleretia paniculata*, in what was, until about five years ago, when it was thrown open to the public, the private garden, and which is literally covered with large panicles of pretty yellow flowers with reddish centres.

The before-mentioned long border beneath the wall, covered with Clematis, Roses, and other flowering wall-shrubs, is made up of herbaceous perennials, dwarf shrubs, bedding-plants, and showy annuals; but it is so arranged by planting in groups that there is great variety of effect, and a very dissimilar character about the different sections, although the whole combine to give one brilliant effect from end to end viewed from any point. In the various groups in the border, the Salpiglossis are very showy, the double Hollyhocks harmonise well with the shrubs on the wall behind them; a panel of double yellow *Marrubium*, groups of tuberous Begonias, Fuchsias, Puloxes, Montbretias, Galatias, Asters, &c., make a great show. The various groups are skilfully linked by uniformity in the edging, and between all the groups of summer flowers appear many herbaceous perennials in bloom.

In arranging the numerous large beds, much skill has been displayed, and while carpet-bedding and old-time bedding-plant displays are almost reduced to the vanishing point, still examples of them are retained in order that all styles of gardening may be represented. Of carpet bedding, there is one very pretty design, principally in Alternantheras, and of the scarlet *Pelargonium* class of bedding, the three or four beds around the fountain this season, will bring no reproach, for the hot, dry weather has suited them admirably; they are masses of brilliant colour. On the other hand the single tuberous Begonias, which have largely displaced the *Pelargoniums*, are not quite so satisfactory this year, the show of them only now becoming important. On the contrary, the dwarf, double-bedding Begonias *Lafayette* and *Count Zephrin* have been thickly studded with brilliant flowers all through the season, and will continue well into the autumn.

The plan is copied in many of the large beds is to have tall specimens of showy things, with a carpeting of dwarfier plants beneath. The effect is good, and a greater amount of show is made than when the effect is on one plane. Among the more striking were noted in one bed, tall plants of the orange-coloured *Streptosolen Jamesoni*, with an undergrowth of *Begonia* edged with *Lobelia* and variegated *Koniger*; another had tall *Campanula pyramidalis*, carpeted with *Verbena venosa* and *Centaurium candidissimum*, edged with variegated *Koniger* and *Eleocharis*. A very effective bed was one of tall blue *Plumbago capensis*, with pink *Hydrangeas* beneath. Another fine bed was of dark-foliated *Azalea tricolor*, planted with clumps of white *Lilium longiflorum* and *Iresine Lindenii*, the whole edged with *Chlorophytum variegatum*. Large plants of the fragrant white *Bouvardia Humboldtii corymbiflora*, plentifully flowered, carpeted with blue *Violas* and edged with *Stellaria graefiana aurea*, was novel

and effective. The *Fuchsia*-beds were very fine, so also *Chelone biolata*, with *Violas*. Among the many showy flowers in the herbaceous borders, the salmon-scarlet *Phlox Coquelicot* is one of the showiest; the *Carnations* are fine and well flowered, and all parts of the garden in the best possible trim, notwithstanding its great extent and the fact that it is visited by large numbers of visitors, especially in the summer months. In what used to be the private garden, *Rhus Cotinus*, *Kohleretia paniculata*, and other flowering shrubs are very beautiful, and in the basin in the centre are a number of the rose-coloured hardy *Water-Lilies* now so popular.

The famous Vine, now sixty-eight years of age, is again bearing a very large number of bunches; and the fine *Yews*, 300 years old, which run beside the main walks, and are such



THE LATE JOSEPH MEREDITH, OF GRAPE-GROWING FAME.

a fine feature in the gardens, are still vigorous, and not exhibiting signs of decay, as so many trees in the neighbourhood of London do, &c.

MR. NAYLOR'S NURSERY.

The extensive walled-in kitchen and fruit gardens of Hampton Court, with the ranges of glasshouses let for the purposes of a nursery, and for the past few years in the occupation of Mr. James Naylor, are in fine condition, and worthy to be alongside the fine public garden; a state of things which did not exist for some time before Mr. Naylor took it over. At present, in the open ground, there is a splendid stock of all the shrubs and trees used for decorative work in and around London, and the quarters in which they are planted are well and trimly kept. Quantities of *Roses* also are grown both indoors and out, the varieties *Niphetos* and *Catherine Mermet* especially.

Chrysanthemums and bedding plants are grown largely; herbaceous perennials, and hardy flowering shrubs; *Tomatos*, *Cucumbers*, *Palms*, *Ferns*, *Bouvardias*, *Pelargoniums*, &c.

In one house is a very fine pink *Verbena*, an improvement on the one now in favour in the market as a pot plant; and some seedling *Heliotropes* of a fine type, one or two of which have extraordinarily large heads of bloom, and very fine individual flowers.

The various fruits, which form a very important feature in these nurseries, are satisfactory beyond the average this year, *Apricots* being unusually good and plentiful. &c.

THE LATE MR. JOSEPH MEREDITH.

MY first acquaintance with Mr. Meredith was during the years 1851—56, when I was an under-gardener at Trentham. He was frequently in the habit of making visits to his brother-in-law, Mr. Fleming, whilst I was there. Meredith was a man of marked kindly character, and had more than an average share of natural ability, so that in anything he undertook to do, success would be sure to follow. I think it was during the spring months of 1861, after I had been three or four years at Combe Abbey, when my newly-planted Vines, then growing in the best turfy-loam the park could produce, and the Grapes were beginning to make a mark for me, that I had an opportunity of visiting Mr. Meredith at his Vineyard, Garston, near Liverpool. He was pleased to show me his Vines, all of course in the best health. He took great pride in opening the door of a little cupboard, to show me some nice Lady Downes's Grapes; he had them in bottles. These he told me he intended to keep as long as he could, and then send them up to one of the Royal Horticultural Society's meetings.

I happened to have also in an cupboard just a similar lot, of which I said nothing to Mr. Meredith, but waited until he had shown his; then I sent up mine. Of this trick Mr. Meredith did not forget to remind me when next we met. Some time after that, we met at the Crystal Palace. We were showing Black Hamburg Grapes. He was awarded 1st & 2nd. It was generally allowed we should have been placed equal; but Mr. Meredith very humorously said how pleased he was that the judges gave him the benefit of the doubt. It was about this time that Mr. Meredith began to carry everything before him in the way of Grape-growing. As Achilles was the great hero of the Iliad, so Meredith was the great hero amongst the Grape-growers of his day.

Just before he went to Paris with Grapes, he called upon me at Combe to see what mine were like, and whilst with me the late Mr. Lane, of Berkhamsted, also came in. The latter had some idea that he would find Mr. Meredith with me. Over the circumstance of their meeting they had some friendly banter. For the impetus given to Grape-growing, the present generation of gardeners owe much to the lead given them by the late Mr. Meredith, who was the undisputed pioneer of all modern Grape-growing; and it would have been exceedingly interesting, had the Fates so spared and favoured him, to have continued a little while longer with us, so that he could have taken his place and still have won immortal honours in his old and favourite field of Grape cultivation.

I can give no particulars as to the manures, artificial or otherwise, Meredith used. Whatever he did in this way, he evidently managed to maintain always an active and healthy root-action. This was the true key. I take the liberty of summarising added to his skilled overhead culture, which led to the grand and masterly finish we always found upon Mr. Meredith's Grapes. Health and vigour form always the first and best defence against the insect pests and sundry ills that Vines are heir to. *W. Miller, Berkswell, August 14.*

ENQUIRIES.

BASIC SLAG.—"Enquirer" asks readers to be so good as to relate their experience of the use of this substance for crops in general, and for grass in particular. In what proportions per acre should it be used?

BUSINGALIA BASELLOIDES.—Has any reader of the *Gardeners' Chronicle* had experience with this climber? I have tried it in various ways without having seen it flower. It is planted-out in the greenhouse, and grows very rapidly. The plant should flower in August, but I am afraid it will not do so. I have tried it in a warm-house with no good results. *A. J. L.* [The flower is not very remarkable. Ed.]

and HEMSLEY in the *Journal Linn Soc.*, vol. 28, p. 611. It is the most probably known fact that the plant will succeed on old-booms in this country, but the Rev. H. EMBANK sent a spray to the meeting, gathered from the open at Nymple's St. George, S. Molton (First class Certificate).

Orehid Committee.

Present: Holly J. Vetch, Esq., in the Chair, and Mr. T. de B. Clowley, W. Cobb, E. Hill, J. Douglas, H. M. Pollett, W. H. Young, and H. J. Chapman.

Mr. J. VETCH & SONS sent a group including three very nice varieties of Cattleya, *x* Atlanta (*guttata* *x* Warszewicz), these differing considerably from each other in colour and shape, but illustrating the free-flowering characteristics of the hybrid. *Laelo-Cattleya* *x* *Prisyraxis* (*L. pumila* *x* *C. Bourningiana*), *Laelo* *x* *Spiridonia* (*L. spirata* *x* *C. purpurata*) and *Laelo-Cattleya* *x* *Nyctalea* (*L. crispata* *x* *C. Warszewiczii*) are very similar to *L. C.* *x* *exoniensis*, and would be difficult to distinguish from the older hybrid. *Cattleya* *x* *Stobie* (*A. Vanda* *x* *Mendeli*) has creamy-white sepals and petals, spotted with miniature purple spots, the open lip bright purple on the front lobe, yellow on the disc, the side-lobes pure white (Vote of Thanks).

J. W. THORNTON, Esq., Brockhill, Weedon, sent a pretty variety of *Laelo-Cattleya* *Atlanta*.

J. S. MOSS, Esq., Bishop's Walkham, sent a cut flower of *Laelo* *x* *Isola* (*L. Isola* *x* *Dayana*).

Sir J. MITCHELL, Maudslayi, Duns N.B. sent, Mr. J. Hamilton, semi-hybrid between *Laelo* *x* *Frederica* and *C. velloziana*, which would be difficult to distinguish from *L. C.* *x* *elegans*.

Col. M. A. SWINLENBOW, Swinfin Hall, Lechliff, sent, Mr. H. Collymore, sent a white variety of *Laelo-Cattleya* *Edwardsii* (a distinct pink in the sepals and petals).

Fruit and Vegetable Committee.

Present: W. G. Binyard, Esq., Chairman, and Messrs. J. G. Chelvi, W. Bates, W. F. S. Mortimer, Alex. Dean, W. Pope, Geo. Kell, H. Markham, Geo. Woodward, F. Q. Lane, Jas. H. Vetch, W. Pompart, W. Walk, J. Wilford, and Geo. Reynolds.

Messrs. H. WASSER & SONS, Swanley, Kent exhibited a collection of fruits and fruit trees. The Apple tree in pot were very well cropped, and were good specimens. We noticed the following varieties: Dimples of Seeding (Wellington), Bismarck, Lady Seeding, Devonshire Quarrenden, Warner's King, Gey's Orange Pippin, Bramley's Seeding, Starling Castle, Yorkshire Beauty, Red Ayrshire &c. Fruits in dishes included Peas and Apples. Of Peas, there were Louise Bonne of Jersey, Jargonelle, Princess, Bourne d'Amiens, Fitzmesson Duchess, and other early or second early ripening varieties. The most conspicuous varieties among the Apples were Bismarck, Twenty Ounce, Emperor Alexandre, Grenadier, Warner's King, Beauty of Bath, and Mrs. Gladstone. There were pretty fruits of Tomatos Golden Nugget, and later ones of Cardinal's King, a first class heavy cropper and variety. Altogether there were forty-five of the fruits (Silver Knight Medal).

Messrs. W. RAY & CO. Mount Pleasant Nurseries, Tottenham, Kent, exhibited fruits of their new Cherry "Noble," which has been figured and frequently described in these columns.

Messrs. H. E. W. LOCK, Sheep Street, Wellingborough, showed fruits of a variety of Red Currant bearing the name of Lock's Clumpin Red.

Dr. BENJAMIN Worthing, showed a nice new fruit of the Cape Gooseberry, *Physalis Peruviana* (Cultural Communication).

An excellent collection of fruit was shown from the garden of Miss ABAMSON, South Vills, Regent's Park sq., Mr. G. Kell, which were very noteworthy, remembering that the fruits were grown in a spot not more than two miles from Charing Cross. Of Grapes we noticed Black Hamburg, Foster's Seeding, Muscat of Alexandria, and Buckland Sweetwater. There were many dishes of Plums, Peaches, Cherries, Melons, Nectarines, Tomatos, &c. (Silver Knight Medal).

A collection of eighteen dishes of Peas was exhibited by Alderman A. WILKIE, Fox Hills, Leeds, Huddersfield sq., Mr. B. Lockwood (Silver Knight Medal).

Awards.

Gooseberry Howard's Lemon. A large green variety, of good flavour, shown by Mr. Geo. Woodward, sq. to Rother Lee, Essex, Earlham Court Estate, near Maidstone. Some sprays that were exhibited were crowded with fruits (Award of Merit).

Bramley's Olden Jargonelle. Messrs. JAS. VETCH & SONS have a cane, 7 feet high, of this variety. It was very abundantly cropped with jet-black fruits, which we thought to possess but little flavour (Award of Merit).

Plant Early Yellow.—A very early variety, with small buds of very moderate quality. See notes on p. 120 of our last issue. From Mr. J. FLEASER, South Woodford, Essex (First-class Certificate).

French Beans, South's Egan and Savory Profile, exhibited by Mr. A. DEAN, Richmond Road, Kingston-Thames. See p. 120 in our last issue (Award of Merit).

Calabrus Little (Quercus) Bachelors, from Messrs. BARR & SONS, King Street, Covent Garden, London, W. C.; and *Improved Nonpareil*, from Messrs. NETTING & SOSS. See p. 120 in our last issue (Awards of Merit).

Patatoes, Gey's of Dundee, from Mr. R. D. HUGHES, 35, Middle Lane, London; *Early Jubilee*, from Messrs. FISHMAN & ROBERTSON, Manchester; and *Express*, from Messrs. CHAS. SHARPE & CO., Ltd., Sheldon. See p. 120 in our last issue (Awards of Merit).

The Lecture.

In the afternoon a lecture on "Tender Plants for Outdoor Gardening," by Mr. W. J. TOWNSEND, Southminster Lodge Gardens, Wokingham, was read by the Secretary.

Among the plants recommended for this purpose were *Fuchsia*, *Habrostrum*, *Christina*, *Newell*, and *Amantia*, *Abutilon*, *Canary Bird*, *Brilliant*, and *Boule de Neige*, *Solanum*, *Isambard*, *Ivy-leaved Polygodium*, *Polygonum*, *perispermata*, &c. Some sensible directions were given as to planting *Fuchsias* and other species in such a manner that the effect of each plant is not destroyed by its neighbour, the system described by Mr. Townsend being known as the "plant system," standard plants over a carpet of dwarfier species, as practised in many of the London parks, and in those belonging to the Zoological Society.

Mr. JAS. HINDON supplemented the list of plants grown by Mr. Townsend, having seen *Bougainvillea glabra* and *Swainsonias* used to excellent effect in the garden under the charge of Mr. Townsend.

Mr. Geo. BINYARD (Chairman) and that *Cassia corymbosa*, *Crematos*, and *Streptosolen Jamesonii*, were also capital plants for use in bedding.

It is curious, however, that none of the speakers mentioned the choice, the use of which has softened the appearance of the bedding in London during the past five or six years.

HARLOW HORTICULTURAL.

JULY 14.—This society held its annual show at Moor Hill, Essex, the pretty country seat of John Falgout, Esq. The nurseries were erected in the park, in which the sports were also held. The cottagers' classes were well filled, though the effects of the drought could be plainly seen. A large tent contained the ladies' table decorations, there were eighteen tables, making quite a feature of the show. There was not much competition in the fruit classes.

Miscellaneous groups of plants arranged in a space 10 feet by 6 feet in square were very good. Mr. DELERGES, sq. to JOHN FALGOUT, Esq., Moor Hill, was awarded with an elegant group of well grown plants. *Acacia*, *hyssopus*, *Croton*, *Humulus*, and *Gloxinia* being a new of the finer plants employed. Mr. GARDNER, sq. to E. WEBB, Esq., of Dorrington House, was 2nd.

For a collection of twelve distinct kinds of vegetable, Mr. DELERGES was 1st. He had very fine *Onions*, *celery* *Peas*, *Tomatos*, and *Beans*.

The grounds were thrown open by kind permission of J. Falgout, Esq. Mr. GARDNER and Mrs. DEARDS are joint hon. secretaries.

NATIONAL AMATEUR GARDENERS.

(LIVERPOOL BRANCH.)

AUGUST 1. The holidays are just now at their height, but that did not deter many members from being present, consequently the Common Hall, Locksley Hey, presented a fine floral picture. Members are enthusiastic, and although the classes are not large, there is keen competition, and a lively interest maintained.

Mrs. STAFFINS took the leading honours with excellent spikes of gladioli, and in the open class for a plant in bloom with a large-flowered *Lilium auratum*, for six Tomatos, and the President's prize class for a *Fuchsia*. Mr. DODD had grand *Gloxinia* flowers, also a rich assortment of cut flowers for the open class prize. Very striking single *Beconias* and *Curtis Bellias* came from Mr. ROBINS. Carnations from Mr. TRYSLEY were faultless, blooms of the heavy-edged "Nigel" being amongst the best met with this season. The President's prize for cut blooms was divided between Mrs. MORRIS and Mr. ROBINS. There were two table decorations from J. Reed, and again a division of the prize between Mrs. STAFFINS and Mrs. HENNER. From a professional standpoint, the judgment over the latter class was considered by some to be decidedly at fault, the former lady, with a charming arrangement of

Sweet Peas, pink Carnations, and handsome traceries of *Coloza* and *Sunlay*, being many points in advance.

Instead of the usual monthly lecture, the evening was devoted to questions and answers, and very profitably too.

THE BRITISH PTERIDOLOGICAL.

AUGUST 5. In accordance with their annual custom the members of this Society assembled at the Institute, Bowness, Windermere, on the above date, with the object of comparing notes respecting the progress of British Fern-culture and discovery, and hearing papers read treating of this interesting branch of study generally.

The attendance was highly satisfactory, also the exhibition of photographs, plants, and fronds of new and improved varieties. Among those present were Mr. C. T. DRURY, F.I.S., V.M.B.; Mr. C. B. GREEN, Acton; Messrs. SMITHES, J. EDWARDS, Manchester; J. L. SMITH, Blackpool; W. TROUGHTON, Preston; J. LOVECLAD, Huddersley; J. GARNETT, W. MARTIN, W. F. ASKEW, Bognor; W. H. ALKINSON, Batley; S. HUDSON, Nelson; R. WHITEHEAD, Lancaster; J. GOTT, J. WIPER, G. WHITEWELL, (Don See a kenald).

After the usual formal business had been transacted, embracing an entirely satisfactory report as regards funds and increased membership, the PRESIDENT (Mr. CHAS. T. DRURY) addressed the meeting, and in the course of his remarks announced that the new Fern-book, *The Book of British Ferns*, was now in the press, and would shortly appear, beautifully illustrated, and replete with matter which should interest both the general reader and the expert. This book will be the outcome of a resolution passed last year, and the efforts of a committee specially appointed to formulate a list of British Fern varieties on the strict lines of the symmetrical and botanical, and will contain numerous articles and papers contributed by the editor and compiler, Mr. Drury, and others.

The officers of the Society were re-elected *en bloc*, and the President then read a most interesting paper contributed by Dr. F. W. STANSFIELD, who was unavailably absent, on "The Culture of Some Difficult British Ferns," in which he dealt at length with such special and peculiar varieties as are particularly exacting in their demands upon the cultivator's care, being either "finely," or weakly in constitution, or whose habitats and environments are naturally such as it is difficult to imitate under culture. This led to an animated discussion, in which it transpired that a vast deal depended upon the locality in which the growers dwell, so that the list of Ferns found difficult in one place varied entirely from that in another locality.

Mr. C. B. GREEN, of Acton, followed, after an interval for lunch, with a capital paper on the Hart-stoigne, "Scopolendium vulgare, its Varieties and Culture," which treated solely of this beautiful species in its numerous varietal types, and their peculiar needs, likes, and dislikes, not forgetting some valuable suggestions as to their culture, and the most successful methods.

The papers having been read and discussed, a very large number of fronds were laid on the table, in conjunction with some photographs and plants, some of which showed marked advance, especially among the filamentous, frilled, and crested Hart-stoignes. Among new wild finds, there was exhibited a very neat, almost triplicate form of *Lactuca promopoma*, found by Mr. TROUGHTON on the previous day in Kentmere, where a few of the party gratified themselves at an opportunity for a hunt. Mr. Drury exhibited a splendid bipinnate or "omulicium" form of *Polypodium vulgare*, found by one of the members in Cornwall, a decidedly finer form of that section than any hitherto seen. Mr. H. BOLTON, of Carnforth, exhibited a very beautiful mucrate, fan-like, and crested-erumpin Hart-stoigne (*S. v. crispum*) fan-like in appearance.

Both the Secretary (Mr. G. WHITEWELL, Serpentine Cottage, Kendal) and the President (Mr. STAN ROAD, Acton, W.) would be glad to communicate with British Fern-lovers desirous of joining the Society. The subscription is very small, and the object, the encouragement of the culture of our beautiful British Fern varieties, of an interesting and patriotic.

WEST DERBY HORTICULTURAL.

AUGUST 5.—This is one of the best of the shows in the Liverpool district, and was held in the Rectory Field on the above date.

The miscellaneous group class was the leading feature, Mr. GEORGE OSBORNE, sq. to Dr. DUFFES, The Brook, winning with a bright arrangement consisting of choice foliage and flowering plants, set in a groundwork of *M. multiflora* Fern, the fronds of long form, of richly-colored *Trochis* Golden Ring, and clothed with *Caladium argenteum* and faint foliage of *Adiantum Dazzle*, one of the oldest yet the best of scarlet flowers for grouping.

Mr. OSBORNE also scored in the classes for twelve Gladioli (chiefly *Lemnos*), hybrids, twelve bunches of *Clarkii* Fern, the fronds of long form, of richly-colored *Trochis* Golden Ring, and clothed with *Caladium argenteum* and faint foliage of *Adiantum Dazzle*, one of the oldest yet the best of scarlet flowers for grouping.

Mr. Eastaff, gr. to G. LAIBOURN, Esq. had the best six Dahlia (Cactus), Staying Night, Esquisite, Miss Webster, Starfish, Mrs. J. J. Crowe, and Britannia. Other classes for cut flowers & of vegetables were well competed.

FRUIT.—Ways of special quality here. Mr. W. Cross won 1st prize for six dishes, in which Black Hamburgh and Buckland Sweetwater Grapes, May Duke Cherries, and Elrage Nectarines were in capital condition.

Mr. T. Gault, gr. to P. WALKER, Esq. had fine bunches of Misset of Alexandria Grapes. Mr. Cross following with richly-coloured Buckland Sweetwater, also winning the class for six dishes of hard fruit.

Next *Campbell*—Mr. C. A. YOUNG, Floral Nursery, West Derby, had a charming collection of Carnations arranged in Banchon stands; Messrs. BOSTON, Cactus, Dahlias; and Mr. J. SKILL, gr. to Mr. HUBBARD, Knotty Ash, grand Black Hamburgh Grapes, and herbaceous plants; and Mr. TWIST, gr. to Mr. H. GIBBONS showed fine Campanulas.

NORTH WARWICKSHIRE HORTICULTURAL.

AUGUST 5.—Through the kindness of H. H. C. Hoare, Esq., this Society held its twentieth annual exhibition in Pennis Park on the above date, when the well-wooded park was thronged with visitors. Last year's exhibition resulted in a loss to the Society of £50, through a wet day. As far as could be judged, this year's show will be a decided financial success. The exhibition is one of the best in Warwickshire.

The arrangements were carried out by Mr. J. Ellison (Secretary) and a committee in a very praiseworthy manner.

GRAPES.

For a group of plants, arranged for effect in a space not exceeding 120 sq. ft., T. B. SMITH, Esq., Copple Hill, Gravely Hill, near Birmingham, was 1st, W. L. GORDON, Esq., St. Chad's, Lichfield, following.

Stove and greenhouse plants were not well shown, and there were few of them. Some well-grown specimen Palms were staged, as was a splendid trio of specimen Polka-gonims. The premier prize winner in the latter class was J. HURT, Esq., Sutton Road, Erdington.

Table decorations were a pretty feature, several extremely beautiful arrangements being made. Looking down the length of these tables, one could not help but be struck with the superiority of the small Peppercorns and Sweet Peas over any other flowers utilised. Mess. M. LINDLEY, of Birch Hill, Edgbaston, was divided 1st.

For six specimen Chrysoms, A. PIERKINSON, Esq., St. Bernard's, Wilde Green, was 1st, 2nd, E. J. BARON, Esq., Gravely Hill.

Roses were shown well for such an unfavourable season, some twelve entries being made in two classes.

Sweet Peas, arranged in various ways, were very conspicuous.

VEGETABLES.

Selblom was a fine display here, even than was staged of this show year. Messrs. SMITH & SONS' 1st prize for a collection was won by R. G. BROWN, Esq., Edgbaston, J. BISHOP, Esq., Sutton Coldfield, being 2nd.

For Messrs. CHURCH'S prize for a collection, E. S. MOORE, Esq., York Lodge, Edgbaston, was 1st, J. BOWEN, Esq., Edgbaston, being 2nd. Many excellent dishes of fruits were staged of the Alca Craig and similar types. Thirteen bunches of Chumbers were entered in one class. All other vegetables were shown and well grown.

FRUIT.

A. PIERKINSON, Esq. was well to the fore for three bunches of black and white grapes.

For a single Melon, S. A. EBBLEY, Esq. was 1st.

Some twenty dishes of Gooseberries were staged, all of them of high merit, this fruit being extremely well grown in the district. All other fruits were well represented in their respective classes.

NON-COMPETITIVE ENTRIES.

Included a grand table of herbaceous annual flowers in great variety, from Mr. T. B. GIBSON, Wandleby Nursery, Sutton Coldfield. A group of plants in flower, as well as cut flowers, was effectively set up by J. AUSTIN & CO., nurserymen, of Gravely Hill. This firm was awarded a Royal Horticultural Society's Medal. A similar award was also made to Mr. A. F. PHILLIPS, of the Aldridge Nursery, for a like exhibit.

MADRESFIELD AGRICULTURAL CLUB.

AUGUST 8.—By permission of the Right Hon. the Earl of Beauchamp, President, this Club held its eighth annual show in the park at Madresfield. The day was fine, and there was a large attendance.

The exhibits were numerous, exceeding those of former years; and the quality of the animals excellent, now especially the horses; some of its prize winners would have won similar honours at any show in the country. At lunch time the President took the chair, and the company had the pleasure of listening to a general and practical speech from his lordship. A

glance around the tent at once assured a visitor that his lordship and tenants well understood each other.

In these days when one hears so much of depression in agriculture, it is good to see a large landlord on such occasions making with his own tenants and other farmers, arrangements to meet since the previous show, and discussing agriculture generally, and the merits and value of the animals and various breeds. Without going into details of the prize-winners, it may be mentioned that the President took the premier award for the best team of draught horses in the show. G. H. Richards.

KIRKCUDBRIGHT HORTICULTURAL.

AUGUST 8.—The annual exhibition of the Kirkcudbright Horticultural Society was held in Bonhill Park in rather unfavourable weather. The entries in nearly all the sections were more than those of last year, and despite the heavy rains of the past few days, flowers were shown in beautiful flower, cut flowers and pot plants being both very good.

In the gardeners' class, William McMillan, gr. to the Countess of SHERKILL, Edinburg, carried off the majority of the prizes for pot plants, and in cut flowers and fruit, James Allan, gr. to JOHN PURROSE, Esq., Arundel House, Dumfries; and JAMES DUFF, Threave, divided the honours. Mr. DUFF also being well to the fore with vegetables.

In the amateur classes, the principal prize-takers were W. McCORMACK, Threave, and G. BENSON, Bange. Messrs. KERR BROS., Dumfries, had a fine display of Cactus, Dahlias, Gladioli, Sweet Peas, &c., and Messrs. T. SMITH & SONS, Edinburg, showed a beautiful stand of Roses.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

AUGUST 12.—The usual bye-law committee meeting was held on this date. Eight new members were elected, and one nominated. The amount paid to sick members since the last meeting was £610. The Treasurer reported having £100 in the bank, and is instructed to invest £100 in the best available speculation stock.

TROWBRIDGE HORTICULTURAL.

AUGUST 11.—Trowbridge, generally so full of visitors on the day of its Annual Flower Show, was practically empty for the rain fell in steady downpour, and but few found their way to the show grounds, but being about the railway station and other places, but the rain would cease. It was of course a great financial loss to the Society.

PLANTS.

Several of the peculiar features of a Trowbridge Show are still maintained, one of them is the Linnæus Trowbridge Exhibition, which JAMES LAY has ceased to exhibit, but GEO. TUCKER, of Hiltopion, has come to the fore, and grows splendid specimens according to the old style. There is with six plants, the like of which probably will not be matched in the kingdom. His dark varieties are charming, and truly favourite, the light ones Mr. H. BOWMAN, Mr. BUCKLE, Tucker-Royal and Western, Barry, Mr. H. C. GIBBET, gr. to T. D. FOXBORO, Esq., Hinton, Charterhouse, was 2nd. He has Elegance, Duke and Arabella and Western Beauty, very fine. Mr. TUCKER was also 1st with four specimens. He had the well-developed plants of Arabella, Finesse, Lorraine, and Mrs. H. BOWMAN, and Mr. CHRISTIE 2nd. Very good specimens are also shown by working men in other classes.

Next in importance come the stove and greenhouse plants; and here Mr. Matthews, gr. to ST. R. W. BROWN, Bath Trowbridge, was 1st with a very good lot, shared among them *Almondia*, *nobilis*, and *Williams*; *Almondia* *speciosa* *major*, *Erica* *Lewini*, *non elegans*; *Poinciana* *contorta*, *Baroness*, *Lyra*, *concolor*, &c. Mr. GEO. TUCKER, nurseryman, Hiltopion, was 2nd. Mr. TUCKER was 1st with six plants, all very good *Stephanotis* *floridula*, *Staph. Giffithi*, *Erica* *Lewini*, *Alca superba*, and *Convolvulus* *speciosa* *major* were the principal ones. Mr. H. MATTHEWS was 2nd.

The best new or rare plant was *Campanula* *B. linnæi* *major*, *Gloxinia* *tricolor* were very good too. Mr. J. KERRY, Mr. G. TUCKER, and the best prize-takers, several specimens of single flowered *Egonopsis*, and Mr. W. P. CRANK for the same number of double *Egonopsis*, in admirable character.

There are two classes for groups of plants, and it is required that one be in a circle, the other a fan circle. In the former case Mr. J. C. POPE, gr. to E. BERRY, Esq., Frome, was 1st.

In the other class, Mr. J. KING, gr. to E. HADFIELD, Esq., Trowbridge, was 1st.

A very fine feature was the class for twelve Lilies. The President, Mr. A. P. STANFORD, taking the 1st prize with a finely developed lot of plants, chief among them some spreading *Trip. Friesii*, a splendid *Davallia* *Meyeri*, and *Gyanogranium*, *Chrysophylla*, *Chelidonium*, &c.

guns, some fine *Adiantums*, &c. Mr. G. TUCKER came 2nd, also with excellent specimens, and two equal 3rd prizes were given.

With nine fine foliated plants, Mr. H. MATTHEWS was 1st, Messrs. E. S. COPE, nurserymen, Bath, being 2nd.

CUT FLOWERS.

Roses were much better than usual, and generally small. With twelve trebles, Messrs. G. COULING & SONS, were 1st.

The eighteen bunches of garden Roses, from Messrs. COULING & SONS, was an excellent feature. They staged an excellent character, Bardon Job, Climbing Sistrano, Princess de Monaco, Archduke Joseph, Mademoiselle de Brant, &c.

Asiatics, quilled Victoria, and Comet types, were all in much better character than could have been anticipated. Messrs. MATTHEWS and TUCKER were 1st and 2nd, with twenty four bunches of stove and greenhouse cut flowers. Messrs. W. J. STOKES & SONS, Hiltopion, were the only exhibitors of twenty-four bunches of hardy flowers, taking the 1st prize with a good selection of Snow-Janes, Pompano, such, and Cactus Dahlias, very good, the latter specially so. Messrs. J. CRAY & SONS, KEANES & CO., and T. CARL, were the leading pot plant winners. Gladioli, Sweet Peas, Carnations, and Panseys, were all good.

FRUIT.

The best twelve dishes came from Mr. W. JOHNSTON, The Gardens, Roof, Aston, who had Black Hamburgh and Misset of Alexandria Grapes, Sea Eagle Peaches, Pines, Pineapple Nectarine, Figs, Plums, &c. Mr. GORDON, 2nd, to Lady ASHBURTON, Rousay, was 2nd. He had the same varieties of grapes, two dishes of Peaches, two of Nectarines, Figs, &c., which appeared on the whole to carry a few more points than Mr. STOKES'S collection.

With six dishes Mr. HALL was 1st, and Mr. STOKES, 2nd. Mr. HALL was 1st with two bunches of Black Hamburgh Grapes. Mr. H. CLARK, gr. to G. E. GORDON, Esq., M.P., 1st, with two bunches of Black Misset, having Madresfield Court, Mr. STOKES was 1st with two bunches of Misset of Alexandria Peaches, Nectarines, Morello Cherries, Appriots, and Plums, were also shown in good character. Dessert Apples, in pairs of dishes, were very good, *Asiaticum* and *Beauty of Bath*, the best, but *Golden Bunch*, *Parson's Nonesuch*, and *Empress of Alexander* were the best Calinary Apples, Windsor and Jaconelle the best Pears.

VEGETABLES.

were not so numerous as usual, but what there were given in quality. Messrs. WEBB & SONS, Messrs. SELLON & SONS, and Messrs. TOWNSEND & SONS, special prizes, brought good competitions, and the best were exhibited in admirable form. Altogether, the reputation of the Trowbridge Show was well maintained.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period August 14 to August 19, 1901. Height above sea level 404 ft.

WIND.	DIRECTION OF WIND.				TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 3 IN.
	AVEAM	DAY.	NIGHT.	RAINFALL.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	LOWEST TEMPERATURE ON GRASS.	
AUGUST 14	100								
AUGUST 15	100								
AUGUST 16	100								
AUGUST 17	100								
AUGUST 18	100								
AUGUST 19	100								
MEANS									

Remarks. The weather during the first part of the week was dull and rather cold with a little rain, becoming brighter and much warmer afterwards.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending August 19, is furnished from the Meteorological Office:—

"The weather during this period was unsettled and rainy in all the more western and north-western parts of the kingdom, but mostly fine over eastern, central, and southern England. On Saturday thunderstorms were experienced in most parts of Great Britain, and also at a few places in Ireland.

"The temperature just equalled the normal in England, S.W., but was above it elsewhere; in England, E., and S.E. the excess was as much as 4°. The highest of the maxima were generally recorded on the 19th, when they reached 91° in England, E., 89° in the Midland Counties, S. in England, E., 85° in England, S., and 82° in the Channel Islands. In Scotland, W., and in Ireland, N., the thermometer did not exceed 69°. The lowest of the minima were registered, as a rule, either on the 6th or 7th; they ranged from 41° in England, S., and 45° in Scotland, E. and W., and England, S.W., to 50° in England, N.W., 51° in Ireland, S., and 54° in the Channel Islands.

"The rainfall was considerably in excess of the mean over Scotland and in Ireland, N., and just equal to it in the Channel Islands. Elsewhere the fall was less than the normal, that at our stations in England, S., and E. being very slight. In some localities, however, the rainfall during the thunderstorm on Saturday was exceptionally heavy—at Aberdeen 1.54 inch was measured, while at Gairloch (Lewisshire) as much as 2.0 inches fell during the space of two hours.

"The bright sunshine was deficient in all districts except England, S. The percentage of the possible duration ranged from 47 in the last-named district, 44 in the Channel Islands, and 11 in England, E., to less than 20 in the north-western and extreme northern parts of the United Kingdom generally, and to only 5 in Ireland, S."

THE WEATHER IN WEST HERTS.

A WEEK of changeable, but on the whole, warm weather. On two days the temperature in shade exceeded 80, but on two others did not rise above 69, while the night readings were quite variable. At 2 feet deep the temperature of the ground is at the present time 4 warmer, and at 1 foot deep 2° warmer, than is seasonable. Light showers of rain occurred on several days, but the total measurement for the week amounted to less than a fourth of an inch—hardly sufficient to moisten the surface of the ground. No measurable quantity of rain water has come through the bare soil permeation gauge for ten days. The record of bright sunshine proved good, averaging nearly nine hours a day. The winds were of about average strength, and the direction almost exclusively some southerly or westerly point, while the atmosphere remained, as a rule, very dry. *E. M. J. Exhthalmist, August 13, 1901.*

ANSWERS TO CORRESPONDENTS.

APPLE SCHONER VON BOSKOOP: Pineapple. Write to one of the many nurserymen at Boskoop, Holland, whose addresses you will find in the *Gardeners' Year Book*. You should have no difficulty in obtaining trees, the variety being very well known there.

BEECH-TREE: B. W. Examine the tree to see if there are any white scale insects (*Coccus*) upon it. If there be none, we cannot guess the malady without a knowledge of the local conditions, or seeing the affected tree.

BEETLE: T. & Co. *Dytiscus marginalis*, common water-beetle.

BOTANICAL TERMS: M. M. The word Phloëm is Nicotian's term for the bast elements of a vascular bundle; it is separated from the wood (xylem) by the cambium. Xylem, means the woody elements of a vascular bundle, possessing tracheal tissue. Instead of consulting the admirable book you mention, you would do well to procure *A Glossary of Botanic Terms*, by B. D. Jackson, published by Duckworth & Co., last year—a work wholly devoted to the explanation of botanical terms.

FUNG: Subscriber. The malady is caused by a fungus (*Cercospora Bollenia*), which was figured and described in the *Gard. Chron.* for July 7, 1900, p. 5. In that article Mr. Geo. Massee said that although admittedly a very destructive parasite when present in quantity, no serious attempt has been made to arrest the progress of *Cercospora Bollenia* beyond collecting and burning all diseased

fallen leaves. Probably spraying would prove to be of service in checking the spread of the fungus if taken in time. The genus *Cercospora* contains about 250 species, all parasites, and in many instances good has resulted from the use of dilute Bordeaux Mixture.

GARDENER'S NOTICE: T. B. A head gardener is a domestic, or menial servant, in the eyes of the law, and in the event of no contract existing to the contrary, is entitled to one month's notice, or money in lieu of that notice.—*E. G.* An under gardener paid by the week would probably have some difficulty in establishing a claim to notice for a longer period.

GLOBE ARTICHOKE: H. M. B. Varieties differ in the amount of flesh upon the crown. We would advise you to get a fresh stock from a reliable seedsman, and cultivate the plants strongly.

HYACINTHS, TULIPS, AND NARCISSES, FOR VARIOUS PURPOSES: Hyacinth. Our "Notices to Correspondents" would need to be commenced on the first page of each issue, and could not be completed on the last, were we to answer many such omnibus questions as you have asked. If you have no knowledge of the particular varieties of these bulbous plants, we should advise you to place your orders with a reliable firm of seedsman, and leave the selection of varieties to them. They know them well, and are not likely to abuse your confidence.

INSECT: E. Donner. The insects that made such "sad havoc" as you describe upon your Peach-trees, and on Ferns, made their escape owing to the "sad havoc" the postmen wrought upon the box in which you sent them—albeit the box appeared to be made of block tin. Thanks for information respecting your two years' service; but we must remind you that we do not publish a directory.—*G. H. S.* Caterpillars of the bull-tip moth (*Pygera bucephala*), a very common species. The parent insect lays its eggs on the outer branches of various forest trees; and the caterpillars feed in colonies, completely defoliating the branches. *C. R. V.*

MESSEMBRYANTHEMES: Mrs. A. Lomp. Write to Messrs. H. Cannell & Sons, Swanley, Kent.

NAMES OF FRUITS: H. McL., Manchester. Very small, poor fruits. Send again when they are approaching ripeness.—*J. R., Guildford.* Probably Golden Noble, but very much over-ripe.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*Veritas*, *Laelia xanthina*.—*J. Mc C.* 1 and 2, both *Silphium laciniatum*. No. 1 has a so-called double flower, owing to the production of ligulate flowers where ordinarily tubular flowers are formed. It is the "Compass plant" of the Americans.—*H. V. S.* 1, *Pteris argyrea*; 2, *Blechnum occidentale*; 3, *Xophodium molle*; 4, *Lastrea aristata variegata*; 5, *Pteris Wimmerii*; 6, *Pteris serrulata cristata*; 7, *Adiantum hispidulum*; 8, *Selaginella Willdenovi*; 9, *Gymnogramma chrysophylla*; 10, *Adiantum capillus-veneris*; 11, *Pteris erecta Mayr.*—*H. L.* 12, *Crocina luteiflora*. Ferns next week. *C. G.* *Medicago cehinus*, Calvary Clover; *Ononis arvensis*, Best Harrow; *Medicago lupulina*.—*G. C.* 1, *Thuya occidentalis*; 2, *Thuopsis delavata*; 3, *Cupressus Lawsoniana*; 4, *Juniperus virginiana*; 5, *Cryptomeria japonica*; 6, *Juniperus chinensis*; 7, *Hypericum Androsium*.—*S. N. I.* *Cuscutera*; 2, *Asclepias curassavica*; 3, *Trachelium caput-meduse*.—*J. W.* 1, *Ceanothus azureus*; 2, *Catalpa bignonioides*; 3, *Escallonia rubra*; 4, *Calycanthus occidentalis*; 5, *Ceanothus*? no flowers; 6, *Rhus Cotinus*.—*J. B.* 1, *Claytonia perfoliata*; 2, not recognised, please send fresh specimen.—*T. B.* Should address the editor on such matters; *Saponaria officinalis*, double fl. var. The leaf of the hard-wooded shrub is probably a *Metrosideros* "Bottle-brush." Send when in flower.—*T. H. P.* *Lycocateria formosa*.—*H. S.* 8. Perhaps the leaf of an *Erythrina*, but this is a mere guess.

OUT-HEATED BOILER: H. M. B. The hot-water apparatuses of which you send illustrations would not be harmful if used with care, because if such care were exercised, no appreciable volume of smoke could occur. At the same time, one can imagine the lamp being carelessly lighted, turned too high, and emitting such a smoke that in a closed house would undoubtedly cause injury to tender plants. If you have a stove placed inside the house, you must be prepared to afford the increased care then necessary.

PLUM EARLY YELLOW: Pineapple. This variety was sent to Chiswick by Mr. Fraser, of South Woodford Nurseries, Essex, and probably you could obtain trees from him.

SPURGE FLAX: X. We have heard *Daphne Mezereum*, so-called, but it is a name that would best be ignored, for the plant is neither a Spurge nor a flax, nor anything like either.

SPANHOPEAS TIGRINA AND WARDIANUM: W. D. The plants having just flowered there can be no better time to remove them to larger baskets than now. If you wait until our next issue, some directions for doing this work will appear in the *Orchid Houses Calendar*. See "The Week's Work."

TOMATO DISEASE: W. K. Your fruits are attacked by the "Black Spot" fungus, *Cladosporium lycopersii*, figured and described in the *Gardeners' Chronicle*, October 1, 1887, p. 109, and frequently repeated. Remove and burn any fruits as soon as they show signs of disease. Another season obtain fresh seeds and soil, and in the early stages of growth spray the plants with the Bordeaux Mixture.

WEEDS: E. R. If you succeeded in proving damage to your own garden the Court might grant you an injunction.

COMMUNICATIONS RECEIVED.—Secretary, Baddia Society.—Secretary, Shropshire Horticultural Society.—Secretary, National Co-operative Society (with thanks).—*Dr. M. C. C. D. Macintosh*—*E. R.*—*W. R. F.*—*H. J. H.*—*J. P. & Sons*—*P. W.*—*H. R.*—*H. J. E. D.*—*H. T. M.*—*F. M.*—*J. O'B.*—*A. P.*—*S. A.*—*F. P.*—*W. Rook*—*E. J.*—*S. E. D.*—*S. Weldon*—*G. W. Rigby*—*A. B.*—*Kempshall*—*E. Webb*—*S. J. M. L.*—*Orden*—*S. Noorjy*—*H. W. G.*—*H. Berkeley*, California, request sent.—*E. P. L.*—*Cook*, London.—*W. E. G.*—*W. G.*—*W. L. J. C.*—*J. S.*—*Dr. Bremer*, Berlin.—*H. M. H.*, Barnstead.

CATALOGUES RECEIVED.

BULBS, ETC.
Hogg & Robertson, 22, Mary Street, Dublin.
J. & F. G. SONS, Ltd., 10, 12, Market Street, Chelsea.
DICKSON & GIBBS, Old Millgate, Manchester.
DICKSON & CO., 1, Waterloo Place, Edinburgh.
J. R. FRASER & SONS, Market Nurseries, Loddham, Notts.
BROWN & WILSON, 10, Market Place, Manchester.
E. P. DIXON & SONS, Hull.
W. CLIBBY & SONS, 10 and 12, Market Street, Manchester, and Aldridge, Cheshire.
DORR & MITCH, 22, Old Street, Manchester.
BELLA BEHRENDT, South, N.B. (wholesale).

HORTICULTURAL BONES.
E. S. WILKS & LEWIS, St. Albans, Herts.

FOREIGN.
ALEXIS DALLIERE, Chaussée de Bruxelles, Gand, Belgium.

STOVE AND GREENHOUSE PLANTS.

L. SAHR, Bachmühlweg, Berlin, Germany.

AGRICULTURAL SEEDS.

TROOD & SOSS, Southampton.

GARDENING APPOINTMENTS.

MR. W. S. RAYNER, for the last four and a half years at Enville Gardens, Staffordshire, has been appointed Gardener to **KANDEL I. MULLERS**, Esq., Stratton Court, Stroudhire.

MR. JOHN BOND has succeeded **MR. W. EARL** as Gardener to the Dowager Countess of HARGREY, at High Ashor, Bocking.

MR. EDWIN CHAMBERS, late Steward and Gardener to **FREDERICK BENNETT**, Esq., Thongston Park, Barr, King's County, Ireland, has taken the Col. COKE, D.L., J.P., Brookhill Hall, Alfreton, Derbyshire.

MR. JOSEPH THOMSON, for the past four years Gardener and steward to **WILLIAM EDWARDS**, Esq., at Abbot's Hill, Hound Hempstead, Herts., as Gardener to **EDWARD STRICKLAND**, Esq., Lyddhurst, Haywards Heath, Sussex.

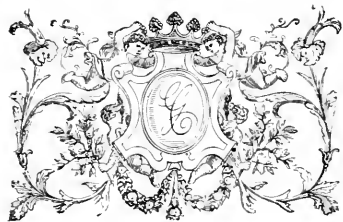
MR. E. PERKINS, for the past two years orchid grower at Ting Park, the seat of **LOD ROBERTSON**, Esq., as Gardener to **H. P. BURBELL**, Esq., Brooklands, Mitcham, Surrey.

MR. W. W. GALE, for the past sixteen months Gardener to **L. S. DYER**, Esq., Westleigh, Claven Arms, Salop., as Gardener to **CHAS. SUTTON**, Esq., Riverside, Cookham, Berkshire.

(For Markets, see p. viii.)



GROUP OF HARDY AZALEAS SHOWN BY MESSRS. CUTBERT AT THE TEMPLE SHOW.



THE
Gardeners' Chronicle

No. 765.—SATURDAY, AUG. 24, 1901.

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RECENT CHRYSANTHEMUM LITERATURE.

A LITTLE more than four years ago, I contributed an article under the above heading to this journal (see *Gard. Chron.*, March 6, 1897). On looking over some later acquisitions, it has occurred to me that a few notes bringing the subject up-to-date may prove welcome to such growers as are interested in the flower from other than a purely cultural standpoint.

During the interval that has elapsed, it cannot be said that any great effort has been made on the part of horticultural authors to produce anything of a very striking character in the way of a handsome book on this popular flower. About a score, principally cheap unpretentious pamphlets, have been the output, and several of these are simply reprints from official publications, such as the journals of local horticultural societies.

Considering the activity on the part of the

French, who are now well over the threshold of the enthusiasm for growing the Chrysanthemum as an exhibition flower, whose shows are yearly increasing, and who are much occupied with everything concerning its progress, it is not surprising to find that since my last contribution they have augmented the literature of the subject by the largest number of independent treatises. Of re-prints or re-issues of works already published it is not intended in this article to take account, or it might certainly be extended. One of the earliest, and decidedly one of the most important new works, is the little volume issued by the French National Chrysanthemum Society, containing the papers read at its Orleans Conference in 1897, and judging from enquiries that have been made of me it contains matter that might prove useful to some of our English growers. Especially is this the case in such articles as Diseases and Parasites, Fertilisation, and the best manures and composts, all three articles being written by men well qualified to speak on such subjects. Following closely on the publication of this was one by M. Calos, of Havre, who issued a little pamphlet the same year (1898) called *Le Chrysanthème, ses Histoire, sa Culture*. M. Ernest Baltet the same year issued as a reprint from the *Journal of the Société Horticole de l'Aube* a short brochure entitled "Culture du Chrysanthème," which he continued in the next year by one called "Chrysanthèmes Rustiques en Plein Air." The only remaining treatise published in 1899 was one by M. Ragot, entitled *Culture Rationnelle du Chrysanthème, précédée de l'Histoire de son Introduction en Europe, &c.*, but the somewhat limited size of this little treatise leaves very little scope for the author to do full justice to the question of history. The following year saw two new works, one a curious Franco-Japanese kind of pamphlet, entitled *Tout le Monde Chrysanthémiste, Méthode Japonaise simple et sans Engrais*. The author, T. Oasna, of Kumamoto, Japan, being chiefly concerned with the recommendation of growing the Chrysanthemum in "terre de Campfire." The other, *Le Chrysanthème Histoire et Culture*, by J. Loebot, being by far the most imposing of the series, and indeed, the only one worthy of the name of a book. A brief notice of this has already appeared in the columns of the *Gardeners' Chronicle*.

I think America is justly entitled to the next place, *Chrysanthemums of 1896*, by L. H. Bailey and Wilhelm Miller; and the *Fourth Report upon Chrysanthemums*, by Wilhelm Miller, being respectively Bulletins 136 and 147 of the Cornell University, are similar in form and style to the one mentioned in my previous article. *The Chrysanthemum, its Past, Present, and Future*, by Edmund M. Wood, looks very much like a separate reprint from the *Transactions of the Massachusetts Horticultural Society*. The copy in my possession is dated 1898. In the ensuing year a compact and handy little book, for which I am indebted to Mr. Leonard Barron, was published by *American Gardening*, called *How to Grow Chrysanthemums*. It is well printed, and contains several very useful illustrations, not the least important of which are those dealing with diseases affecting the plant.

English authors have little to boast of in the interval of four years. *Modern Chrysanthemum Culture for the Million*, by Geo.

Garner; *The Show Chrysanthemum and its Cultivation*, by C. Scott; *The Chrysanthemum*, by H. J. Jones, issued by Biggs & Son in their handy series, are small, inexpensive pamphlets. One other, however, H. J. Jones' *Portfolio of New Chrysanthemums*, which was issued early in the present year, is a distinct artistic effort, reminding us very much of his previous *edition de luxe*, which he called the *Chrysanthemum Album*.

Belgium has only contributed one addition to the literature of the Chrysanthemum, viz., *Traité sur le Supplément à la Liste Descriptive des Chrysanthèmes d'Hiver*, by M. O. de Meulenere. From frequent enquiries that are made of me for dates and raiser's names, I cannot but regard M. de Meulenere's literary work as a very useful one. Unfortunately it appeals to only a limited section, and I understand this catalogue will in future cease to appear.

Holland, like most of our near neighbours has its Chrysanthemum Society. On the occasion of its show in 1897, the Nederlandsche Chrysanthemum Club, as it is called, issued an official handbook and catalogue, in which Mr. J. K. Biddle wrote a long account of the origin and history of the Autumn Queen, to which was appended a cultural guide and other matter. This has subsequently been re-issued.

From other countries, Denmark, Italy, Germany, and Portugal, where the flower is advancing in public estimation, nothing of a bibliographical nature appears to have made its appearance since the last communication. It will be remembered that reference was made to what was then a new feature in connection with Chrysanthemum literature, namely, the appearance of periodical publications devoted mainly or exclusively to the dissemination of Chrysanthemum news, and the names of several such were given.

One of these, the *Nord Horticole*, the official organ of the Northern French Chrysanthemum Society, has ceased to exist; but *Le Chrysanthème*, issued by the French National Chrysanthemum Society at Lyons, still appears at regular intervals, and in its way has no rival. The *Journal of the Chrysanthemum* section of the National Horticultural Society of France is still supplied to members, and has been enlarged and much improved in every way. New comers in this department of literary activity remain to be noticed. Of these *Il Crisubano* is certainly the best. This is the official publication of the Italian National Chrysanthemum Society, and is a most creditable production for so young a society. It is larger in form than any of the others, is well printed, frequently illustrated, but is rather meagrely supplied with news other than local. The newest aspirant of this description for public favour is *L. Soleil d'Automne*, the monthly organ of the Swiss National Chrysanthemum Society, a publication more on the lines of the defunct *Nord Horticole*, in which Chrysanthemum matters are very largely dealt with.

Altogether, we may fairly assume that while literary workers are paying such attention to the Chrysanthemum, there is good ground for supposing that its adherents are still a numerous company, and that the flower, as I have before observed, has not yet entered upon the period of decline that was predicted of it by some well-meaning but mistaken people a few years ago. *C. Harman Payne*.

LILIES AND THEIR CULTURE.

(continued from p. 145.)

LILIUM LONGIFLORUM AND ITS ALLIES.—This is a group of very popular Lilies, embracing such species as *longiflorum*, *sulphureum*, *Browni*, *odorum*, and several others. All have long, funnel-shaped, fragrant flowers. A few are not absolutely hardy, save in select situations, whilst others have been rendered less so by continued cultivation under glass, and by the selection of larger-growing sports without regard to hardiness. One in particular, *L. longiflorum* var. *Harrisii*, is best left alone, owing to its liability to disease, and the possibility of its affecting other varieties of the same species. They are all vigorous-growing plants, having abundance of both

atmosphere, frequent syringing, weekly fungigation, and an occasional application of a very weak solution of nitrate of soda or diluted drainage from cowsheds when showing flower, are stepping-stones to successful cultivation under glass. Anyone can grow longiflorums, provided they water carefully—too little being even less harmful than too much. A well-grown plant should have raised itself bodily fully an inch in its pot by the time it is fit to flower by means of the development of roots below. It should be at least 3 feet high, and should bear eight or ten flowers. A periodical reselection takes place on Japanese Lily farms, and several distinct forms (horticulturally) are now sent over, all of which are marked improvements on the *Lilium longiflorum* of twenty years ago.

longiflorum, named *formosanum*, is also good, planted earlier than *longiflorum* does, compared with which it is distinct in its dwarf stature (cf. fig.), and in the bronzy tint prevailing on the outside of the perianth. The flowers are not so large, nor so freshly produced, as in *longiflorum*; but notwithstanding these shortcomings, the plant has its value for general planting. The flowers have the fragrance of *L. odorum*, not of *L. longiflorum*.

L. eximium *Wilsoni* is a big-growing form of *longiflorum*, having pure white flowers, differing from the type in the markedly revolute tips of the petals, and in the greater length of the tube; it is the finest of all longiflorums, but is only suitable for pot culture (see fig. 17, p. 147).

Albo marginatum is a form resembling the



FIG. 46.—FIELD OF LILIUM ALEXANDRE CULTIVATED IN JAPAN BY MESSRS. L. BOEHRMER AND CO.

kinds of roots. *L. longiflorum* is the most freely-grown Lily in the genus; tons of cut flowers are produced by this plant for the London and provincial markets, and its cultivation has become a great industry. In the first place, it is not absolutely hardy; it will flower well the first year, if planted about March, and freely watered throughout the summer; half the bulbs will die in the succeeding winter, and the survivors will not flower well in the succeeding year. To all intents and purposes it is an annual, in that profitable cultivation ceases after it has flowered once.

Lilium longiflorum may be grown in a variety of ways; planted in beds it is one of the most effective of plants; potted for greenhouse decoration it is invaluable, but it must not be overwatered. All the white Trumpet Lilies quickly lose their roots if soddened, therefore it is not desirable to over-pot them; a moderately damp condition at the root, a buoyant

A selection known as *giganteum* is the best for commercial and private growers, on account of the size and number of its flowers, and its vigorous healthy growth. It is not necessary to particularise all these forms, as there is little doubt but that they will give place to others in course of time. Three marked varieties, however, must be mentioned.

L. Takesim is a dwarfier plant, with longer, more linear foliage and stems, tinted with purple below, the flowers are more tubular than those of *longiflorum*, and they are also tinted with violet on the keels; the depth and extent of the colouring being dependent upon the amount of shade the flowers get. *L. Takesim* is the best of all longiflorums for all outside planting, as the bulbs do not perish in the first winter. They will not flower quite so well in the second year as in the first; the difference, however, will be but slight.

Another hardy and useful variety of *L.*

older types in its flowers, with leaves handsomely margined with white. The variegation is almost as good as that of *Dracena Godseffiana*; it makes a very useful decorative pot plant.

The var. *Harrisii*, as I have said before, is best left alone; it is not particularly wanted, for the improved forms of *L. longiflorum* fill its place to a nicety. Their flowers are of equal commercial value, and the bulbs of longiflorum improved are less costly than those of *L. l. Harrisii*; they may also be forced or retarded with every facility. In purchasing retarded bulbs of this or any Lily, I may here note that it is well to bear in mind the fact that small bulbs suffer considerably from the freezing process, and that good results cannot be obtained from them; in fact, they are almost useless. Under any conditions, the purchase of cheap, small bulbs of the trumpet Lilies is mistaken economy, larger bulbs costing twice

the money are cheaper in the end. Before leaving the true longiflorum Lilies, I would again impress upon growers the need for careful watering—a happy medium is the best state. Softened plants or plants that have been allowed to become dry at intervals flower badly, and invariably with a split perianth, and with numerous green blotches and other deformities on the petals.

Lilium Browni and *L. odorum*,* both of which are closely allied to *L. longiflorum*, have been subjects of much controversy amongst botanists as to their separate specific rank; and I do not think the matter is yet fully cleared up. For garden purposes, it is advisable to regard them as distinct plants. *Lilium Browni* is a slender growing plant, attaining a height of 2 feet or more; the leaves are

posure to sunshine the plants get. If grown under glass they should be placed outside a week before the plants flower, in order that the outer brown colour may be developed. Both *L. odorum* and *L. Browni* and its varieties grow as well as *L. longiflorum* under similar treatment, and they last several years under cultivation without deteriorating. They flower in July in the open, and may be forced to flower as early as May with ease. A warm situation, and a rich, moist soil brings out their best qualities; they rarely fail to flower, and may be regarded as most accommodating Lilies.

Lilium neilgherrense (see p. 53, July 29), is a moderately strong growing Lily, with fragrant, narrowly funnel-shaped, pale yellow flowers, widely spreading in the upper third in the manner of the flowers of *Nicotiana glauca*. It is

side of the three. It has widely funnel-shaped flowers, coloured a warm rosy-brown on the outside, the throat being of a rich creamy-yellow tint. It grows 5 or more feet in height, and bears numerous bulbils on the mature stems. The bulbils are easily distinguished by their black-purple colour.

L. nepalense grows to about 3 feet in height, and bears drooping, funnel-shaped flowers about 5 inches long, of a pale yellow colour, whitest at the entrance to the throat. The upper third of the perianth limb is much recurved, and the petals have a wax-like texture—a most beautiful flower.

Three rare Lilies, most suitable for greenhouse culture, are *L. polyphyllum*, *L. Lowi*, and *L. philippinense*. They are all slender-growing plants of rather delicate constitution.

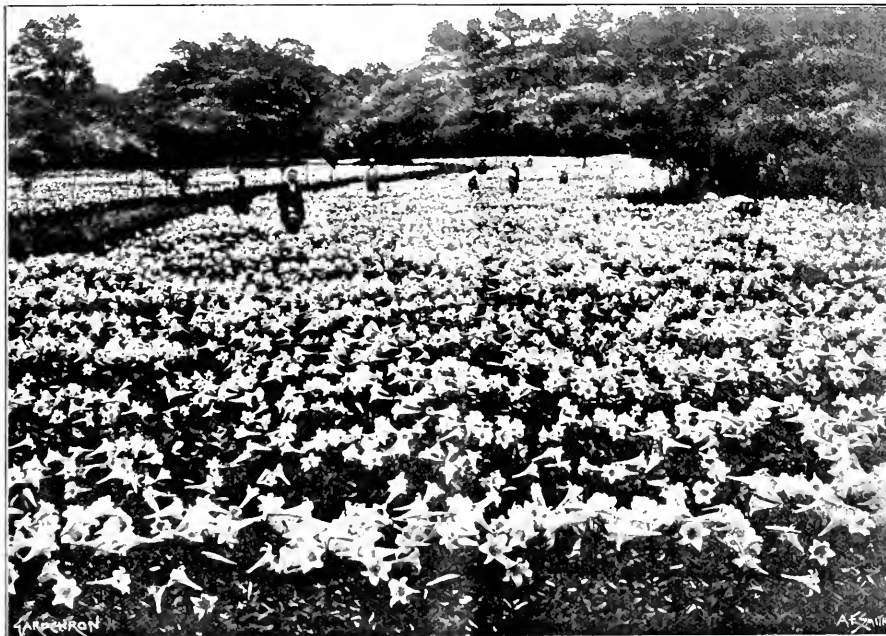


FIG. 17.—FIELD OF *LILIAM LONGIFLORUM* VAR. *EXIMA* CULTIVATED IN JAPAN BY MESSRS. BOHMER AND CO., OF YOKOHAMA.

linear-lanceolate, arching, and of a deep green colour (the leaves of the var. *leucanthum* are completely rolled at the tips). One flower is produced on each stem (rarely two or three), coloured a uniform violet tint outside the tube; the inside of the flower is pure white, and the petals recurve to the tips to the fullest extent. It is narrower in the tube, and longer in the entire flower than in *L. odorum*. *L. odorum* (see supplementary illustration, July 29), flowers a fortnight earlier, has pale green, rigid, oblanceolate leaves, and one or two, occasionally three massive flowers coloured creamy-white when it first opens, changing to pure white on the fourth or fifth day. The outside of the flower is flushed a warm brown, the extent of the colouring in this plant and in *L. Browni* being dependent upon the ex-

not sufficiently hardy to grow in the open in most parts of Britain, but planted at the foot of a south wall, and abounded plenty of moisture, it is likely to thrive.

Both this species, *L. sulphureum*, and *L. nepalense*, do not make much growth till very late in the first season of planting outside, unless the bulbils are potted and started into growth by plunging them in a warm propagating bed of tan as soon as received. Even then they will not flower well the first season. They grow well enough the second year, getting away very early, inasmuch that the young growths often need no protection from frosts. They are most satisfactory in pots for greenhouse decoration, but do not last longer than three years in good health. It is possible to establish them outside if they last much longer, whilst the ideal spot for them is a border under glass, where they can grow when they will.

L. sulphureum is the best Lily to grow out-

They succeed under such treatment as would be given to greenhouse Begonias, both as regards soil and atmosphere.

L. polyphyllum has bottle-shaped buds, and half reflexing flowers of elegant shape, coloured whitish cream; the inside of the flower is covered with a multitude of linear, unvariegated spots, most dense near the middle of the petal. The outside of the perianth is green, or greyish-green.

L. Lowi is a very distinct plant with white flowers, prominently keeled green outside, the inside being heavily spotted purple. Two or three flowers are borne on each stem.

L. philippinense is the aristocrat among trumpet Lilies. It has very slender stems, linear-lanceolate leaves, and a pure white, long-tubed flower, longer than any longiflorum, the tips of the petals alone reflexing.

Geo. B. Mallett.

(To be continued.)

* *L. odorum* is also known as *L. spicatum* Colchesterensis, and is given to it by the late Dr. Wallace, of Colchester, but now superseded.

REMARKS ON THE CONDITION OF
THE FRUIT CROPS.

(See Tables, ante, pp. 88-91.)

(Continued from p. 129.)

5. SOUTHERN COUNTIES.

BERKSHIRE.—Apples and Pears bloomed abundantly, but set badly. Plums have been much blighted. Peaches, Nectarines, and Apricots on open walls have a fair crop of fruits. Small fruits, especially Gooseberries, Raspberries, and Currants, have yielded well, and are good in quality. Strawberries, on the other hand, suffered severely from the exceptional drought, early sorts being the best, and later varieties all but a failure. Walnuts are very plentiful, and Filberts a good crop. *Thos. Plumb, Holme Park Gardens, Sonning.*

—As a rule, Apples are a failure. I have a nice sprinkling of Wellingtons, but my Payne-Rent takes the lead, as usual, for cropping. It is a capital, all-round Apple. Mr. Veitch has got it, but I do not think he will ever be bold enough to exhibit it in a modern bloated collection. *Robt. Fenn, Sulhamstead.*

—The fruit crops are fairly satisfactory, with the exception of Apples, which have failed. On bush and pyramidal trees, however, we have some fruits of Ecklinville, Stirling Castle, Frogmore Prolific, and Margil. Small fruits have been exceptionally plentiful and good. Plums have been disappointing, for although appearing to set well, many dropped at an early stage. *W. Pope, Highclere Gardens, Newbury.*

—The crops are heavy generally, but the fruit, Apples in particular, will be small. The total rainfall from May 11 to June 28 was only 4.9 inches. The following varieties are carrying heavy crops, and in some instances will be thinned considerably. *Apples*—Allington Pippin Red Astrachan, Beauty of Bath, Duke of Devonshire, Beauty of Stoke, Bismarck, Chelmsford Wonder, Christmas Pearmain, Claygate Pearmain, Cox's Orange Pippin, Dutch Mignonne, Ecklinville Seedling, Golden Noble, Frogmore Prolific, Gold Medal, James Grieve, Lane's Prince Albert, Lord Derby, Lord Suffield, Newton Wonder, Peasgood's Nonsuch, Ribston Pippin, Pott's Seedling, Rosemary Russet, Royal Jubilee, Wealthy, Duke of York, Malcolm Dunn, and Williams' Favourite. *Pears*—Beacon, Beurré Baltet, Beurré Clairgeau, B. d'Amansis, B. Gifford, B. Superfin, Clapp's Favourite, Citron des Carmes, Durondeau, Doyenné Bussoch, D. du Comice, Fondante d'Automne, Le Lectier, Marguerite Marillat, Marie Louise, Louis Bonne of Jersey, Thompson's, Olivier de Serres, Petite Margaret, Vicar of Winkfield, Pitmaston Duchess, and Winter Nelis. *Peaches*—Premier, Prince of Wales, and Stirling Castle, are fine here outside. *Strawberries*—The earliest was Noble, picking commenced outside June 16, and being a dry season, the quality and flavour were good. Royal Sovereign was about a week later. Leader was very large, and of moderate flavour. It should make a good market variety. Aromatic is very prolific, and one of the best for travelling; Coatsness is distinct and good; and Waterloo, best for late crop, of which I am now (July 17) gathering very fine berries. *Owen Thomas, Royal Gardens, Windsor.*

DORSETSHIRE.—Several varieties of Apples are cropping well. The best are the following: Cox's Orange Pippin, Duke of Devonshire, King of Pippins, Irish Peach, Lord Suffield, Margil, Ribston Pippin, Northern Spy, Koswick Codlin, King of Tomkin's County, and Worcester Pearmain. Pears are very scarce, the best are Beurré Diel, B. Rancee, and Glout Moreau. Czar is the only well-cropped Plum. Damsons

are a failure. Cherries have been a very good crop. Gooseberries, and Red and White Currants are good, Black Currants moderate. Strawberries were good, but the season was a short one. *Thos. Denny, Down House Gardens, Blandford.*

—The Apple crop is the worst for many years past. On orchard standards, some few trees only which failed to crop last year are carrying a light crop this season. Free bearing kinds on bush trees in the kitchen garden are carrying an average crop. Pears also are a light crop, many trees not bearing a fourth of a crop. Plums are an average crop on walls, but almost a failure on bush and standard trees. Sweet Cherries have been excellent, and Morellos equally good. Peaches, Nectarines, and Apricots are good average crops, and the trees are very healthy. Of small fruits, Red, White, and Black Currants have been specially fine and clean. Raspberries are also very fine and abundant, so were Strawberries. Cobnuts are nearly a failure. *T. Turton, Castle Gardens, Sherborne, Dorset.*

—Apples are an average crop; but some of the trees in grass orchards have very few fruits. Bush and espalier-trees are heavily cropped. The cold rains and hail during setting time spoiled a promising Pear bloom. Plums are good, but under average. Cherries are one of the poorest crops I remember. Apricots, Peaches, and Nectarines are good. Strawberries have borne a heavy crop, and the quality was excellent. *Ben Campbell, The Gardens, Kingston House, Dorchester.*

HAMPSHIRE.—Big fruits in this district are very scarce, excepting in very sheltered places; most bush fruits are plentiful. Strawberries were a good crop, but did not last long; Royal Sovereign, Leader, Monarch, Trafalgar, and Latest-of-All were grand. *Arthur Lee, Palace House Gardens, Bantley.*

—Apple-trees are variable, one tree has a full crop, its neighbour of the same sort none. The trees are healthy, and free from insect pests. The buds, too, are plumping up for next season. Lord Grosvenor, as usual, is one of the best of early sorts, and Cox's Orange Pippin has a fair crop of healthy fruits. Plums and Cherries are especially a heavy crop. Strawberries, in spite of the dry weather, have been plentiful; Leader, Royal Sovereign, and Sir J. Paxton have been the principal sorts. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

—Apples on young bush-trees are carrying excellent crops of good, clear fruits. Old trees that bore heavily last season have scarcely any fruits. Pears are thin. Plums are a good average crop, and clean. Small fruits are abundant, but Gooseberries have suffered much from the ravages of the caterpillar. Strawberries have been good, but were soon over. *A. G. Nichols, Strathfieldsaye Gardens, Mortimer, R.S.O.*

KENT.—Of Apples there is a fair crop of early sorts, but all store fruits will be scarce. Of Plums, Victoria, Pond's Seedling, and Diamond are best cropped. Apples and Plums were over-cropped in 1900. Pears on walls are good, and there is a crop of market sorts on standards. *George Bangard, Maidstone.*

—The Apple crop is irregular. Some varieties, as Cox's Orange Pippin, Duchess' Favourite, Worcester Pearmain, Warner's King, Lane's Prince Albert, The Queen, Lady Sudeley, Ecklinville Seedling, Lord Suffield, Koswick Codlin, and Stirling Castle, are carrying heavy crops. *George Hutt, Lullingstone Castle Gardens.*

—Varieties of Apples vary greatly, some kinds, such as Blenheim Orange, being heavily

laden, while many others have no fruits. Strawberries were splendid. *Geo. Fennell, the Gardens, Fairbairn, Tonbridge.*

—Apples, Pears, and Plums are decidedly short in this district; they will be good in quality where well cultivated. Cherries have been splendid. Strawberries were too much forced by the weather to pay well. Nuts are the worst failure we have known for many years, if they do not constitute a record. *B. Champion, Merecroft, Maidstone.*

—Apples in this district are scarcer than they have been for years past. Large standard trees of Blenheim Orange, of which there is a number around here, are very heavily cropped. Some years ago, when mildew almost ruined trees of the variety Lord Suffield, I had almost condemned this variety, but I am glad now that I did not do so; for the last two or three years it has been perfect in its growth and development of fruit. I know there are growers who prefer Lord Grosvenor to Suffield, but why I cannot quite understand, as the latter is a much better and stronger grower, and the shape of the fruit is better and it is more solid. "Stone's" is the most reliable variety we grow. It has not failed for several years past, and amongst mid-season culinary sorts it is one of our very best when grown on the Paradise stock. Lane's Prince Albert is another good sort, but owing to its heavy cropping propensities, this should be on the Crab stock, and even then it requires to be heavily thinned. Most varieties of Pears are carrying good crops. Durondeau, Emile d'Heyst, Doyenné du Comice, Beurré Hardy, Triomphe de Vienne, Passe Crassane, are exceptionally good. The Cherry crop has been prodigious and good. It might be feared that owing to the large crop the fruits would be small, but this is not the case. I may mention that one acre of fruit in this parish sold for £41 by auction. This is all profit, as the grass pays the rent, and the grower has no picking to do, and no trouble whatever. I have seen the new Cherry "Noble" again this year, and its qualities confirm my early opinion, that for market purposes it has a great future before it. Its two most distinctive qualities are firmness in texture, which will enable it to travel well, and its beautiful appearance. A new Black Currant that I have fruited for the first time this year is named "Boskoop." It is a much stronger grower than any sort we grow, and very much larger in berry and bunch. I would advise anyone requiring Black Currants to give this sort a trial. I believe Messrs. Bunyard, of Maidstone, are distributing it. *G. Woodward, Bisham Court Gardens, Maidstone.*

MIDDLESEX.—Of Apples and Pears we have a very thin crop; fortunately the later kinds are giving the best results this year; and a few of the best Apples, such as Cox's Orange, are our heaviest croppers this season. Pears were a heavy crop, but the drought caused many fruits to drop early. Small fruits have been abundant and good; but the Strawberry crop was a short one. Peaches and Apricots are good, and the trees look well. Plums are a very poor crop. *Geo. Wythes, Syon House, Brentford.*

—The Strawberry crop was the best for a number of years, especially on young plants put out a year ago. Pears are especially good in quantity and quality. Apples and Plums look remarkably well, and promise excellent crops. Bush fruits have been very good. Peaches and Nectarines are not quite an average crop. With the exception of aphid on Peaches and Nectarines, insect pests have not been very troublesome. *S. T. Wright, R.H.S. Gardens, Chiswick.*

MIDDLESEX.—The fruit crop is somewhat light, and especially Apples; the trees which bore heavily last year have little or no fruit this season. Pears are much below the average—perhaps due to the long spell of cold, wet weather experienced during the flowering period. Morollo Cherries are plentiful, and soft fruits were splendid. *H. Mackham, Wrotham Park Gardens, Boreet.*

All fruit crops promised well with us at the flowering period; all were, however, unusually backward in arriving at that stage. Peaches, Nectarines, and Plums phenomenally so. I think the warm weather that was for a time experienced in April hastened the Peaches and Nectarines too much, hence they failed

SURREY.—The present season has not only given a capital crop of Strawberries that needed only more rain to have made it a record one; but other soft fruits, such as Gooseberries, Currants, and Raspberries have been remarkably abundant and fine. Cherries have been very plentiful also. Apples seem likely to be abundant enough to make of them a profitable crop, and with more rain should prove a fine sample. Pears are sufficiently abundant, and although here and there thin, especially Williams' Bon Chrétien, yet there will probably be a satisfactory crop. Plums and Damsons promise in many places to be a good crop. Walnuts are plentiful, but small Nuts are scarce. *Alex. Dean, Kingston.*

is wonderful, considering the marvellous crops of last year. All bush fruits are heavily cropped. The Logan-berry and Strawberries have been perfectly phenomenal, and very good. *W. Wilks, Slitely.*

— Apples, with the exception of Benheim Orange, Bismarck, and King Harry, are above the average crop. Tyler's Kernel, Flower of Kent, Ecklinville Seedling, Lord Southill, Lord Grosvenor, and Ribston Pippin, bear splendid crops, and are free from disease. *J. F. McLeod, Dover House Gardens, Rochester.*

— Small fruits have been exceptionally good, especially Raspberries and Strawberries. Apples and Pears set an average crop of fruits, but have since suffered from the drought. *W. Haines, Cobham Park Gardens, Cobham.*

WILTSHIRE.—The Apple crop is the smallest I have seen in this neighbourhood for the last thirty years. Bush fruits are plentiful, excepting Black Currants. Strawberries have been abundant, but the season short. *Jos. Trollope, Loughat Gardens, Warrminster.*

— The Apple and Plum crops are exceptionally light, due partly to the heavy crops last year, and partly to the continued low temperature during the period that the trees were in blossom. *T. Challis, Wilton House Gardens, Salisbury.*

7. ENGLAND, N.W.

LANASHIRE. All kinds of Apples grown here are carrying a good crop. We have the best crop of Marie Louise and Williams' Bon Chrétien Pears (on trees 30 to 40 feet high), that we have had for twenty years. Co's Golden Drop Plum on a west wall has a better crop than usual. The soil in this garden is very holding, and in some parts not too well drained, so that we have not suffered from drought. *W. P. Roberts, The Gardens, Cae'don Hall, Preston.*

WESTMORLAND. Owing to bullinches, &c., most Apple and Plum buds in orchard were taken. On wall-trees the crops are light. Strawberries were good; but bush fruits are slight crop. *W. A. Miller, Underley Gardens, Kirkby Lonsdale.*

(To be continued.)

PELARGONIUM ENDLICHERIANUM.

THAT a Pelargonium should be found in Cilicia, is one of those facts that set speculative botanists thinking how a solitary species should be found so far away from South African headquarters. There is a vast number of species of the genus in South Africa, and some few in Abyssinia. Of more immediate consequence to the gardener, is the fact that this perennial species is all but hardy in Sir Trevor Lawrence's garden at Barford, near Dorking, very slight protection being needed. The root-stock is fleshy, producing long-stalked condole, reniform, crenate, pubescent lower leaves; whilst those on the stem are more or less deeply three to five-lobed. The flower-stalks, 1 to 2 ft. in height, bear a tuft of five to fifteen flowers each, with two petals only of a glowing pink colour, the reticulate veins being of a darker purple. It is not necessary to go further into botanical detail, as the plant is well described in the books cited in the footnote; and our illustration (fig. 18), from a drawing by Mr. Worthington Smith, taken from a plant exhibited recently by Sir Trevor



FIG. 18.—PELARGONIUM ENDLICHERIANUM; HARDY PERENNIAL; FLOWERS ROSE-COLOURED.
(From the garden of Sir Trevor Lawrence, Bart.)

to set well. The various forms of aphides have been more troublesome than usual, and worst upon wall trees. Relative thereto I am more convinced than ever of the importance of winter dressings, when the application of insecticides, owing to the greater strength at which they can be used, are far more effective. Owing to the prolonged drought, the watering of all crops has been imperative, but good results have been achieved. The two best Strawberries are Royal Sovereign and Latest-of-All; these will require a deal of heating on a light loam on gravelly soil. Alpine Strawberries have been, and promise to be, far away into October, a heavy and remunerative crop for private consumption; they should be grown more than they have been—the conservative tendency of some of us has not favoured their extended culture. *James Hudson, Gunnersbury House Gardens, Acton, W.*

— Some varieties of Apples have a good crop, others none. Altogether they are about average. The trees are in very good order. Strawberries and bush fruit were very plentiful and good. *W. E. Humphreys, The Grange Gardens, Hackbridge.*

— The Apple crop is light this year, owing to the very heavy crops the trees carried last year. Pears are thin, owing to cold east winds and frost while the trees were in bloom. Stone fruits are good. Small fruits are very heavily cropped, particularly black and red Currants; while Raspberries are the finest crop I have ever seen. *W. C. Leach, Albury Park Gardens, Guildford.*

— Apples-trees which are bearing at all are fully cropped; but many trees have no fruits to speak of. Pears are a fair average crop all round. Plums are a fair crop, which

* PELARGONIUM ENDLICHERIANUM, FENZL - Pugliese, n. 16; Boissier, *Flora Orientalis*, t. 1867, p. 87, Hook. f., *Bot. Beech.*, t. 190, Nicholson, *Dictionary of Gardening*, iii. (1875), p. 61, fig. 63.

Lawrence, will serve to give a sufficient idea of the general appearance of the plant. While strongly recommending it to the notice of lovers of herbaceous plants, we have no doubt it would respond to the persuasions of the forcing-house, and that it would be useful for hybridising purposes. By its means it seems likely that we could get a hardy variety of the Ivy-leaved section of the genus.

"NATURE-STUDY."*

(Continued from p. 126.)

"WHAT better subject can be taken for our purpose than the insect world, which is full of object lessons? KIBBY, in his introductory letter to his book on *Entomology*, wrote: 'Insects have forestalled us in our inventions, and we ought to pay a closer attention to them and their ways than we have hitherto done, since it is not at all improbable that the result would be many useful hints for the improvement of our arts and manufactures, and perhaps for some beneficial discoveries. The instruments also with which they are provided are no less wonderful and various than the operations themselves. They have their saws and files and augers and gimlets and knives and lancets and scissors and forceps, with many other similar implements, several of which act in more than one capacity, and with a complex and alternate motion to which we have not yet attained in the use of our tools. If we attend to the history and manners of insects they will furnish us with many useful lessons in ethics, and from them we may learn to improve ourselves in various virtues. If we value diligence and indefatigable industry, judgment, prudence, and foresight, economy and frugality; if we look upon modesty and diffidence as female ornaments; if we revere parental affection; if of all these and many more virtues, insects in their various instincts exhibit several striking examples.' In another part of the same work in speaking of the value of a study of entomology in the education of the youth, KIBBY writes: 'All modern writers on this study of entomology in the education of the youth, unite in recommending natural history; and if the quality of accurate discrimination, the ready perception of resemblances among diversities, and still more the quick and accurate perception of diversity in the midst of resemblances, constitutes one of the most important operations of the understanding; if it be indeed the foundation of clear ideas and the acquisition of whatever can be truly called knowledge, depends most materially on the possession of it; if 'the best logic be that which teaches us to suspend our judgments;' and 'the art of seeing, so useful, so universal, and yet so uncommon, be one of the most valuable a man can possess,' there can be no doubt of the judiciousness of their advice. Of all the branches of natural history, entomology is unquestionably the best fitted for this disciplining the mind of youth; and simply from these circumstances, that its objects have life, are gifted with surprising instincts admirably calculated to attract youthful attention, and are to be met with everywhere.'

"It is not necessary to confine the examination of plants to the spring of the year, for a very great deal may be done by indoor work in copying Nature. In one of the American schools, where much is done in Nature-study, a very simple contrivance provided interest and instruction for a whole winter. It consisted of an old crate which was converted into a glass-sided box to form a terrarium (terra-earth, just as aquarium from aqua—

water). The bottom of the box was covered with a layer of soil. In one corner a mossy pile, and in another a mass of Thistles and Clover, one or two small plants and some twigs, completed the vegetable world. The crystals and larvae of some common insects were put into the case with some lady-birds, grasshoppers, spiders, and small toads. Such an object provided during the winter months an endless interest for the pupils, and undoubtedly roused such interest in their minds that with the return of spring the interest taken in outside objects was most marked. This perhaps is the simplest form of Nature-study, and should be the starting-point. The next step would be of a little deeper character, and along with actual observation there should be a noting of facts. In all things it is well to encourage among pupils this recording of what is seen; it is of great assistance to the memory and useful for reference. As an example of what I mean, take for instance such a branch as the natural history of the plant. The points that would be noted would be:—First, the kind of plant, the characters which mark it off from others surrounding it; secondly, where found; on the side of the road, grassfield, cornfield, &c.; thirdly, whether sheltered or not, and its relation to other plants; fourthly, the nature of the root, flower, leaf, if any fruit, the kind and form; fifthly, the time of flowering and the general character of the flower; how the flowers are fertilised, if by insects, the kind of insect. With the older pupils a few more details may be noted, as the common and scientific manner. After the initial work has been done, Nature-study may become the teaching of useful knowledge relating to farm work. I do not advocate the teaching of what is known as agriculture, but I believe that a great deal of useful and valuable information may be put before the pupils in elementary schools which will help to arouse an intelligent interest in the varied operations of the farm. After all, the aim of the authorities in advocating Nature-study is to so educate the labouring class of the country that they will remain on the land and not drift into the towns to swell the number of the unemployed.

(To be continued.)

The Week's Work.

THE ORCHID HOUSES.

By H. I. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Stanhopeas would probably become extinct in gardens were it not that the old-established places, that make no pretension to special Orchid culture, continue to cultivate them, suspended in baskets from the roof of the stoves. The excuse is made that the flowers are so short-lived, and the perfume is so overpowering, that the plants are not worth anything. These are probably mere excuses, for the plants are generally found in a very indifferent state of health in an Orchid-collection, and to see them really happy we must go to some old-fashioned garden, as it was my pleasure to do a few days ago, in the West of England. The results prove that the conditions provided in an ordinary plant-stove are what *Stanhopeas* require; and further, that they should be rarely disturbed at the roots, except to take a little of the old material away and afford a top-dressing, which may be done annually. I saw a plant of a variety of *S. Wardi* that had no fewer than nine spikes, with three and four flower-buds each, nearly ready to expand, and it had not been repotted for years. The best time in which to repot or top-dress *Stanhopeas* is almost immediately after they have flowered. Do not repot the plants unless the potting material has become decomposed, or the decay of the basket necessitates it. Provide

liberal, clean drainage; but as the *Stanhopeas* usually produce their flower-scapes from the base, they penetrate through the compost, and must be afforded the means of exit through the drainage. The crooks at the bottom should be so arranged that they may do this. The potting compost must be of an open nature, consisting of two parts peat, one of sphagnum-moss, and a liberal sprinkling of moderately coarse charcoal. Press this compost moderately firm about the base of the plant; water the plants directly after the operation, and encourage the roots to get hold of and establish themselves in the new compost. Shade from direct rays of the sunshine until the plants are re-established.

Peristeria elata generally succeeds in the plant-stove. I remember to have seen some huge specimens in charge of the foreman of the general plant houses in one of the greatest Orchid establishments. I have never seen their equals since. The man in charge of these afterwards became the Orchid specialist, but although he continued to cultivate the *Peristerias*, they have sadly deteriorated. I saw plants producing flower-scapes freely in a garden near Exeter, recently, where they have grown for many years, the whole stock having been obtained from one small plant. These plants are potted in the autumn each year in a compost of good fibrous strong loam, rough peat, a little leaf-soil, and a liberal sprinkling of rough sand. Plants now advancing their flower-scapes, if root-bound, should be afforded occasional applications of weak liquid cow-manure.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Prestwood Hall, Loughborough.

Cyclamens.—Prepare the requisite number of seed-pans for the purpose of sowing seeds of *Cyclamens* during this month, or not later than the first week in September. Cover the drainage material in each pan with moss, and use a compost of loam and leaf-soil in about equal proportions, adding a little fine mortar-rubble and sand. Make the soil firm, and the surface even, then distribute the seed, pressing it into the soil with the fingers; cover to the depth of $\frac{1}{2}$ -inch, and water with a fine rose-can. Place pieces of glass over the pans, and put the latter in a cold frame for a month or six weeks until the seedlings appear. As soon as the seed-leaf appears, lift the pans as closely to the glass as possible. Do not let the soil become dry. Continue to afford abundance of ventilation to plants approaching the flowering stage, removing the lights at night during the next two or three weeks.

Bulbs.—As the catalogues are now coming to hand, selection of varieties will be necessary that the order may be sent for them at once. The named varieties of *Hyacinths* and *Daffodils* to bloom during January should be potted by the beginning of September. Having already referred to early varieties of bulbs for forcing, the following remarks deal with bulbs for giving a display of flowers from January onwards.

Hyacinths.—The following varieties can be depended upon to give good results. Single reds: Charles Dickens, "Ornament Rose," Macaulay, Koh-i-noor, Garibaldi, Mrs. Becher Stowe, King of the Belgians, Princess Clothilde, Queen of *Hyacinths*, Comtesse of Rosebery, Vuurbaak, Von Schiller. Double reds: Novelty, Princess Louise, Empress of India, Lord Wellington, Susanna Maria, and Venus de Medici. Single whites: Avalanche, Alba super-bissima, Miss Nightingale, Mont Blanc, Grandeur à Merveille, La Franchise, La Grandesse, Mr. Plimsoll, Princess of Wales, Queen of the Netherlands, Snowball, and Finnoecia. Double whites: Edison, La Grandesse, Prince of Waterloo, Bonquet Royal, Florence Nightingale, Globosa, and La Tour d'Auvergne. Single blues: Marie, Queen of the Blues, Grand Lilas, Baron Van Tuyll, Challenger, Charles Dickens, Leonidas, Lord Derby, King of the Blues, Prince of Wales, General Havelock, Czar Peter, Sir J. Lawrence, and Grand Maître. Double blues: Perfection, Garrick, Charles

* Addressed by Mr. P. Hedworth Foulkes, F.R.S., F.E.S., at the Harper Adams Agricultural College, August 1.

Dickens, Blocksberg, Crown Prince of Sweden, and Van Speyk. Single yellows; King of Yellows, Obelisk, Ida, John Stuart Mill, Bird of Paradise, and L'Or d'Australia. All the foregoing are recommended for single pots and glasses. For making a display of flowers, bulbs to pot three in a pot may be obtained at a cheaper rate. Good varieties for that purpose are, whites; The Bride, Rosa Bonheur, and Elaine; blues; Her Majesty, Royal Blue, and Madame Lesseps; pinks; Coquette, Delicate, Gertrude, and Venus; yellows; Yellow Prince, and La Pluie d'Or.

Polyanthus Narvissi.—I name those in the order in which they will flower; Gloriosa, Soleil d'Or, Bazaar-han Major, Grand Monarque, Grand Primo, and Grand Saltana.

Tulips.—Early varieties of Due Van Thoe—crimson, scarlet, vermilion, white, and yellow—are all good for early forcing. Of later varieties may be named Canary Bird, Chrysolora, King of the Yellows, La Belle Alliance, Bride of Haarlem, Cottage Maid, Crimson King, Pottelbakker, scarlet, white, and yellow; Keizer's Kroon, Proserpine, Thomas Moore, and Vermilion Brilliant. Of double varieties; La Candeur, Prince of Wales, Rex rubrorum, Tournesol, Tournesol Yellow, and Imperator rubrorum.

Daffodils or Narcissus.—For pots the following are amongst the best varieties, viz., N. Ard-Righ, N. Golden Spur, N. Henry Irving, N. bicolor Empress, N. bicolor Horsfield, N. Emperor, N. maximum, N. rugulosus, N. Talmont's plume, N. princeps; the two last-named varieties should be grown in quantity for cutting purposes. The selection from the medium-crowned section of Daffodils should include Cynosure, Stella, Orange-Phoenix, Sulphur Phoenix, Incarnapink, single and double, Leedsii, and Sir Watkin. N. postions ornatus and single sweet-scented Jonquills will afford sweet-scented flowers for decorative purposes, and should be grown in quantity.

Miscellaneous.—For furnishing front row plants in the greenhouse or conservatory, *Seilla sibirica*, *Crocus* in variety, and *Chionodoxa Lucifera* are desirable. But several bulbs in a pot to give a good display of bloom. The cultural requirements of bulbs will be referred to next week.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Brighton, East Huddleigh, Devonshire.

Coleworts.—Get out later sowings of these while the ground remains moist; a distance of 9 to 12 inches each way will be sufficient. A narrow border that has yielded such crops as Lettuce, Turnips, or Carrots, will be suitable.

Lettuce and Endive.—Plant good breadths on an open piece of ground, and afford a space of 12 to 15 inches each way between the plants; dust them with lime and soot late in the evening or early in the morning, to keep away slugs.

Broad Beans sown at the end of May are now yielding good crops. Clear the ground of exhausted crops, that it may be planted with Colewort, borecole, and Kail, or sown with a late crop of Turnips. These would supply a remunerative crop of greens in the spring, should they fail to form roots of a serviceable size.

French or Kidney Beans.—The latest-sown crop of these should be kept well supplied with water when in flower, or the blooms will fail to set. We have given Veitch's Hybrid a trial this season, and it has proved a thoroughly good main crop variety, being a strong grower and very prolific. It requires to be sown thinly, and 3 feet space should be allowed between the rows. A sowing should soon be made that can be given glass protection later when frost threatens. Those who have pits heated with hot-water usually devote part of them to this vegetable. The soil should be fairly rich and light, and 2 feet or more below the leaders or raters. Sow in drills 2½ inches deep and 18 inches asunder. Another method

is to sow in boxes, or pots 8 inches in diameter, placing them out-doors for the present, where the pots can be plunged, and shading them with a few mats until the seeds have germinated. *Sion House*, *Filmer's* Forcing, and *Veitch's Superb Early Forcing*, are suitable varieties.

Peas.—As much of the spring sowing as can be spared should be cut back fairly hard to encourage new growth before cold nights occur, this will keep a supply up to the new year, or even later, providing the weather be not too severe. Keep the surface soil well stirred between the rows of the last sowing and those planted out for mid-winter use.

Miscellaneous.—Weeds are best removed by the hand, then use the flat hoe wherever it can be worked. Keep the walks clean, and roll them occasionally while damp. If the walks are of turf, cut the grass every ten days or so, finishing off with a heavy hand-roller the week after cutting.

THE HARDY FRUIT GARDEN.

By C. HERAS.

Wasps are becoming very numerous and troublesome, especially among Plums and late Cherries. All nests should be searched out and destroyed. Where the nests are in the ground, a very easy method of destroying them is by pouring in gas-tar by means of an old watering-pot. This may be done at any time of the day, as the absent wasps are sure to entrap themselves in the tar on their return, and it should be used liberally around the entrance to the nest. The old method of destruction with gunpowder and sulphur, and then digging out the nest, is very effective, but must be done at night, when all the wasps are at home. If the garden labourers be offered a premium upon each nest destroyed, most of the nests are likely to be discovered and destroyed at night. A lump of wadding soaked in a solution of cyanide of potassium and pushed into the entrance of the nest on a pointed stick, is another means of destroying them; but the cyanide being a very deadly poison, extreme care must be used, and the poison must not be brought at all near to the nose or mouth of the workman.

Earwigs are very troublesome among wall fruits, especially where the walls are old and contain old nail and other holes. They may be trapped in large numbers by placing 9-inch lengths of dry Broad Bean-stalks among the branches close to the wall. These should be examined every morning and emptied of the earwigs, a bottle partially filled with water being carried round for their reception.

The Fruit Store. As the storing of some varieties of early fruits will shortly be necessary, the fruit-store should be thoroughly cleansed at once; the woodwork and shelves washed down with soap and water, and rinsed with clear water afterwards. Where there are brick walls, these should be lime-washed. When finished, throw open the doors and ventilators until the inside is dry. If the floor is paved this should be washed also, but if of hard, trodden earth, the surface should be scraped off and freshened. An equable temperature is not always possible in fruit-rooms covered with tiles or slates, neither of which for this purpose is equal to a thatch of good straw or heather.

THE FLOWER GARDEN.

By T. H. STAVE, Gardener to Lord Poltmore, Poltmore Park, Exeter.

Fibrous-rooted Begonia flower profusely in the beds, and are suitable for forming masses of bloom, but they are seen to best advantage when planted sparingly over a carpet of some dwarf plant, and taller plants mixed with them. Three good sorts among the fibrous-rooted kinds are *Abundance*, colour coral-pink; *Fairy Queen*, or *Crimson Boddler*, useful as an edging; and *Carriker*, colour white. In propagating these *Begonias* from cuttings, care should be taken to preserve all the buds in the axils of the leaves, even leaving the one at the

bottom of the cutting. Where possible, select only such cuttings that have wood-buds, for although the tops of the plants will strike, such cuttings only form one straight shoot as plants, and therefore do not show the natural growth of the plants. Propagate at once, if cuttings can be obtained without destroying the appearance of the plants. If not, the old plants may be lifted later, and divided up or held as stock. Two or three cuttings placed now in small pots, or inserted in shallow pans in light sandy soil, will succeed. Place them in a frame, and do not keep the atmosphere too close or wet.

Annuals.—If a display of these is wished to follow the bulbs in late spring, a sowing should now be made, especially in cooler districts. *Larkspurs*, *Scabious*, *Coleus*, *Calliopsis*, *Clarkias*, &c., are all very useful for this purpose, and may be sown where they are to flower, or for transplanting later to the ground as it becomes available. *Larkspurs* are not so good to the ordinary bud this season. Seeds bought in, and sown saved, have scarcely a light shade amongst them. Last season the light shades predominated, and were very beautiful.

General Remarks.—Remove all decaying flower-spikes and lower-trusses from the beds; continue to pinch such plants as *Althæa*, *Therax*, *Coleus*, *Pyrethrum*, &c. Afford supports to tall-growing plants. Remove the flower-stems from *Cannas* as they pass out of bloom, and afford the plants copious supplies of water if the weather is dry. Tie up *Dahlia* growths, and afford the plants plenty of water, and a mulch; thin the blooms. Remove dead flower-stems from *Carnations*; continue to layer for young plants—the earlier the layers are rooted the better. Mow the lawns frequently; the grass may not grow much in the very hot weather, but weeds will. Trim the edges of beds and walks, and maintain a tidy appearance generally.

FRUITS UNDER GLASS.

By MALCOLM McKEIVIE, Gardener to SIR CHAS. TENNANT, The Glen, Inverhunting, Peeblesshire.

Lifting Wood-vines.—In too many private gardens Vines are preserved long after they have ceased to be profitable. In the case of exhausted borders, in which the roots are too deep, and the berries shank, the present is a good time to lift them. The old soil should be carefully removed with a fork, beginning at the outside, taking care not to injure the Vine-roots, and as the work proceeds lay them in damp mats and keep them moist. Take special care of all fibrous roots, and if necessary, re-make the border all through, adding new drainage and drain-pipes, so as to keep the drainage in a sweet condition. Cut back any old, decayed roots to a live part, spreading out the small fibrous roots carefully, and keeping all near to the surface. Make the new compost firm, but take care that in ramming it you do not injure the roots. When complete, spread a mulching of fresh stable-mannure over the surface, and saturate the border with water. Syringe the Vines several times daily, and shade them from the sun. In most cases a restricted border is best, adding soil as required in after years. The most important part in lifting is to get the roots re-covered without long exposure, and to keep the air close and moist. The compost should consist of good turfy loam, old mortar rubble, crushed bones, charcoal, and a sprinkling of Thomson's Vine Manure. Do not use any decayed manure, as when used in quantity, or there is a deficiency of root action, it causes the new soil to sour before the roots can take hold of it. It is surprising how soon such old Vines take to their new conditions, if kept moist by syringing and damping all parts of the house. This work should be done in the autumn, as there is then the certainty of success. Crop lightly the first season afterwards, and do not force the Vines, but permit them to grow freely, and the terminals to extend themselves, stopping the laterals when they touch each other.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER. Special Notice to Correspondents.—The Editor does not undertake to return to correspondents the original articles, but will return the proofs, if possible, by special arrangement.

Illustrations.—The Editor will accept illustrations and photographs of a suitable quality, but no reproduction of gardens, or of ornamental plants, flowers, trees, and so forth, cannot be responsible for illustrations.

Letters for Publication, as well as specimens and plants for examination, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London, W.C. Contributions should be written on ONE SIDE ONLY OF THE PAPER, and sent in the usual way, sealed, and duly signed by the writer. If desired, the contributions will not be printed, but kept in a drawer to edit at leisure.

Newspapers.—Correspondents sending newspapers should be careful to send the papers which they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 24.—Strathearn Horticultural Society's Show.

TUESDAY, AUG. 27.—Royal Horticultural Society's Committee meet.

WEDNESDAY, AUG. 28.—Exhibition of Pot Plants and Flowers at Glasgow, by the Glasgow and West of Scotland Horticultural Societies, in connection with the Glasgow Exhibition authorities, 2 days.

THURSDAY, AUG. 29.—Barnenden Horticultural Society's Show.

FRIDAY, AUG. 30.—Barnenden Horticultural Society's Show, 2 days.

SALES.

MONDAY, AUG. 26.—Great Trade Sale of Dutch Bulbs, at Portico and Morris Rooms.

TUESDAY, AUG. 27.—Great Trade Sale of Dutch Bulbs, at Portico and Morris Rooms.

FRIDAY, AUG. 30.—Great Trade Sale of Dutch Bulbs, and Imported and Established Orchids, at Portico and Morris Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at CLYDEWICK.—60.7.

ACTUAL TEMPERATURES.—

LONDON.—Aug. 24, 6 P.M. Max 76. Min 56.1.
 August 25.—Fine, warm.
 PROVINCES.—August 21, 6 P.M. Max 67. Min 46.
 Counties.—Min. 59, Scotland.

It is always a matter of great interest to rosarians to know to whom and for what the Gold Medals for the new seedling Roses are awarded. A tribunal which decides what are to be commended and what left on one side is composed of the best leading rosarians, both amateur and professional, and consequently commands and receives the confidence of all Rose-growers. It is true that this jury, as the French call all such tribunals, may, like other juries, sometimes make mistakes, but they are mistakes which are few and far between, and not more than are inevitable by fallible men.

As will be seen, not only exhibition Roses, but a garden Rose has been decorated. And it is also interesting to notice that two firms which have never before received such an honour, have won the Medals this year. Two have been obtained by Messrs. B. R. CANT & CO., one by Messrs. JAMES VEITCH & SONS, and one by Messrs. ALEXANDER DICKSON & SONS, Newtownards.

It was at the Richmond Show that Messrs. B. R. CANT & SONS obtained the Gold Medal for their new H.P. Ben Cant (figured at p. 13, July 6), and around it there is a little history. About four years ago Mr. B. CANT (the younger of the two brothers who now so diligently carry on the business of the firm) began

the cross-breeding of Roses, believing that there was much to be done in this line; and the success which has attended his efforts, obtaining two Gold Medals the first year that any of his products were exhibited, shows the skill and intelligence with which his operations were carried out. "Ben Cant" is named after the old veteran, who was regarded as the very prince of Rose exhibitors; it was raised during his lifetime, though he did not live to see it exhibited in its full beauty. It is the product of Victor Hugo crossed with Susanne-Marie Rodocanachi, and clearly shows that it is a true cross, exhibiting the qualities of both parents. It is a fine sturdy grower, making shoots 3 feet 6 inches to 4 feet in height—some are even higher; the foliage is large and pointed, similar to that of Victor Hugo, but much finer, and more leathery. The flowers are a brilliant deep crimson, slightly veined and shaded darker; the outer petals are rounded after the Rodocanachi type, very firm and leathery; the centre is well defined, pointed, and very high, and when in its best phase, has a very bold and striking appearance, sometimes measuring as much as six inches across, and even when fully expanded the flowers retain their colour, and last extremely well. It is, we are informed, thoroughly perpetual, throwing out a large number of laterals, all of which bloom in the autumn. It is destined to stay, and will long keep before the minds of the rosarians of the future the name of one whose memory we of the present generation always cherish; probably had it been raised in France they would have called it Souvenir de Ben Cant, but our shorter name is more convenient and just as efficient.

Mrs. B. R. Cant is the name given to a second Gold Medal Rose raised by this firm. It seems likely to be a very valuable addition to our Tea-scented Roses, being very vigorous in habit, flowering continuously all through the season, which is evidenced by its obtaining an Award of Merit at the show of the Royal Horticultural Society of September 25. We have never known a Rose obtain such an honour at so late a period of the season; its colour is a beautiful rose on the outer petals, sometimes even quite a rich red; while the inner petals are soft, silvery-rose, suffused with buff at the base of the petals. The foliage is a very attractive deep rich blue-green, the young growth being a bronze-red. The blooms are compact, full, and symmetrical, and the flower-lust well when out.

Queen Alexandra.—The qualities of Crimson Rambler are so fully recognised by all lovers of a garden that it is certain that it will be much used by the hybridiser, and Messrs. JAMES VEITCH & SONS have succeeded in producing a seedling which will no doubt be a great acquisition as a pillar Rose. It is a seedling from Crimson Rambler crossed with Rosa multiflora simplex; the flowers are in large clusters like Crimson Rambler, but of a rich rose colour (see p. 27, July 13). A Gold Medal was awarded to it at the Temple Show, where the QUEEN was present, and the bouquet presented to HER MAJESTY consisted of this Rose and the late Mr. BENNETT's well known "Her Majesty."

Edith Dombrowski.—Rosarians have for a long time said, "I wish we could get a white Rose with the shape of A. K. Williams."

The well-known firm of Messrs. ALEX. DICKSON & SONS, of Newtownards, seem on the way to accomplish this, if they have not actually succeeded. The Rose at present under notice is described by them as white, with a faint flush of pink in the bud; the blooms are said to be of the form of A. K. Williams, and are produced singly on very firm, erect footstalks, qualities which all exhibitors of Roses will appreciate; it is an excellent cut-back Rose, every shoot carrying a bloom.

It will thus be seen that the present season has been prolific in Gold Medal Roses. We do not know when those flowers will be distributed to the Rose-loving public, but one of them at least will be for sale (Queen Alexandra) this autumn, and Mrs. B. R. Cant in June next.

WISTARIAS.—We are accustomed to see these very beautiful plants grown as climbers or trailers, but under certain conditions it is desirable to grow them in a limited space, or to arrange them in groups as part of a decorative design, and for this purpose they can be grown as standards. Our supplementary illustration was taken from some plants exhibited at the last Temple Show by Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held on Tuesday, August 27, in the Drill Hall, Buckingham Gate, Westminster, when a lecture on "Garden Manures" will be given by Mr. F. J. BAKER, A.R.C.S., at 3 o'clock.

—At a general meeting held on Tuesday, August 13, eighteen new Fellows were elected, making 706 since the beginning of the present year.

LONICERA HILDEBRANDIANA.—Owing to a mischance, for which we are not responsible, we stated in our last report of the Royal Horticultural Society that this had been grown out of doors in Devonshire, the fact being that it was grown and flowered in the garden of the Rev. H. EWANK, St. John's, Ryde, Isle of Wight.

A LARGE VINE.—The Daily News says that "Lord BREADALBANE is the owner of the finest Vine in Europe. It was planted at Auchmore House, in Scotland, more than half a century ago, and is quite double the size of its rival at Hampton Court. It produced 4000 bunches of Grapes, not long ago, in one season alone."

PRESENTATION TO MR. T. H. COOK.—There was a very large gathering at Gosford, Haddingtonshire, on Saturday evening, to do honour to Mr. T. H. COOK, Gosford, previous to his leaving the district to fill the important post of head gardener to his Majesty the KING at Sandringham. Mr. CONNOR, Craigielaw, presided, and previous to making Mr. COOK the recipient of several handsome presents, gave a brief sketch of his successful career as a gardener, and mentioned how highly his services had been appreciated by Lord WEMYSS and all others during his ten years' stay at Gosford. He then handed over to Mr. COOK, in name of many subscribers, a handsome mounted oak tea-tray, bearing the following inscription:—"Presented to Mr. THOMAS COOK by his fellow-servants, on his leaving Gosford for Sandringham, August, 1901." This gift was accompanied by a hot-water jug, cake-basket, and ten volumes of Chambers' Encyclopaedia, from the same donors. Mr. SCLATER, Edinburgh, afterwards handed over

a beautifully chased solid silver salver and purse of sovereigns, in name of Aberlady and other subscribers, bearing the following inscription:—"Presented to Mr. T. H. Cook by his Aberlady and other friends, on the occasion of his appointment to be chief gardener at Sandringham to His Majesty the KING, August, 1901." On Monday, Lord WEMYSS personally presented Mr. Cook with a handsome inlaid ringpiece, with the inscription:—"Presented by the Earl of WEMYSS to Mr. THOMAS COOK, on his leaving Gosford for Sandringham, August, 1901."

ROYAL APPOINTMENTS.—We have received so many intimations of late that such-and-such a firm has been honoured by a Royal appointment, that our printers have been confused with them. It is necessary to point out that a paragraph which appeared on p. 131 of our last issue should have read something as follows:—Messrs. LITTLE & BALLANTYNE, Carlisle, have been appointed nurserymen and seedsmen to the KING, having previously held similar appointments to Queen VICTORIA and the Prince of WALES. We have also to announce that Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nurseries, King's Road, Chelsea, S.W., have been appointed nurserymen and seedsmen to the KING.

THE NATIONAL DAHLIA SOCIETY.—We would remind our readers that the annual show of the National Dahlia Society will be held at the Crystal Palace on Sept. 6 and 7. The schedule of prizes includes forty-nine classes; and that for four Cactus Dahlias in pots, that made a poor display last year, has been retained, in the hope that exhibitors, being better able a second time to get their plants into the best condition at a certain date, a better result will be obtained. The society will also meet at the Drill Hall, on Sept. 24, for the purpose of inspecting late-flowering varieties submitted for certificate.

GLUT OF MUSHROOMS.—A correspondent notes that there appears to be a glut of Mushrooms in various parts of the country. In the early part of the week there were good samples achieving a ready sale at 3*d.* and 4*d.* per lb.; and from Carlisle it is stated that prices were as low as 1*d.* per quart, and farmers were complaining of the havoc caused by those engaged in gathering the fungi. The crop of the edible sorts in Cumberland last week was unprecedented; last Friday night 1000 baskets were sent off to one town in the north, and so large has the supply been, that much had to be refused by dealers—they could not find baskets for packing to send by rail. Some people have stated that so thick in several places was the crop, that a scythe could have been used with advantage.

CARPET-BEDDING. The third edition of a handbook on this subject, entitled *La Mosaïque Culture Pratique*, has just been issued by M. ALBERT MAUMENE (Librairie et Imprimerie Horticoles, 81 bis, Rue de Grenelle, Paris). The author devotes his chapters to: the history of Carpet-bedding, illustrated by numerous plans and pictures; Decorative Considerations; Uses of Carpet-bedding; Various Kinds of Carpet-bedding; Colour and its Uses; Plants and their Values in Bedding; Study of Styles and Patterns; Arrangement and Planting; Application of Plants to the Ground; After-care of a Plantation; Plants Suitable to the Work; Raising and Growing Plants for the Purpose; Carpet-bedding abroad; Specimens of Designs; and an Index. Thus it will be seen that the scope of the book is fairly comprehensive. M. MAUMENE by no means confines himself to plants with ornamental foliage

and flowers of primary colours, with which elaborate geometrical patterns can be wrought out; these, it is true, receive their due share of attention, but there is also much said about alpinas and other dwarf or taller plants which are to be grown for a less particular, more general effect. This makes the book interesting, not merely to the comparatively few who still favour "mosaic" bedding, but to all who like select plants of proportions suitable to the places in which they are to be grown.

DOUBLE DAHLIA.—MESSRS. CANNEL send us a flower-head of a Dahlia, in which the ray-florets bear at their base, where they join the ovary, one or more strap-shaped petals, which are sometimes confluent, and form a second imperfect corolla. As the colour of the rays was a deep maroon, a striking contrast was produced. MESSRS. CANNEL would do well to endeavour to develop and fix this peculiarity.

CENTENARY FRENCH BEAN.—Mr. Wood, of Penrith, submits a sample of his golden French Bean "Centenary," a dwarf Butter-Bean, with yellowish, fleshy pods destitute of parchment. Having submitted them to the test of cooking, we can say that they are excellent. Mr. Wood claims that they are early, and come into bearing quickly.

PUBLICATIONS RECEIVED.—*Proceedings of the Agri-Horticultural Society of Madras, October-November, 1900.* Contents: Citron, Natmogs on the Plain, Xow tamin (*Cesalpinia digyna*), Paspalum dilatatum, and notes on other subjects. *The Agri-Horticultural Society of Madras: The Annual Meeting, March 25, 1901.* "The year has been one of progress in several directions, Mr. Cavanagh, who arrived on January 17, has already effected considerable improvements in the gardens, and has extended the work of the Society in various ways."—*Bulletin of the Botanical Department, Jamaica, July, 1901.* Contents: Curing and Packing Produce, Imperfect Coco-Nut, Foot-rot and varieties of Cocoa.

NURSERY NOTES.

DICKSON & ROBINSON, MANCHESTER.

THE Manchester horticulturists were recently invited to view the trial-grounds of Messrs. Dickson & Robinson. These trial-grounds are between 4 and 5 acres in extent, and are situate at Northenden, a pretty little suburb. The soil is of fair quality, and representative of the Manchester district generally.

Sweet Peas and culinary Peas are very largely grown here for the purpose of comparison. Of the former, some of the best varieties noticed were Sidopian, Gorgeous, Emily Henderson, Mont Blanc (a very fine white), Americus, Mars, Stanley, Oriental, and Duke of Westminster; in all about eighty distinct varieties. One hundred distinct varieties of culinary Peas were growing side by side. Mr. Robinson pointed out the characters and utility of the various sorts. A new seedling, unnamed, is now in its second or third year of trial at these grounds; it is also at Chiswick this year to be reported upon. It has a very fine habit, splendid pods, and deliciously-flavoured Peas, and is a good cropper. Gradus and Alderman are two excellent varieties succeeding well. Triumph was pointed out as a good late variety.

Of Lettuces there were thirty varieties, Beet fifty, Carrots forty, Kidney Beans fifty, Scarlet Runners twenty, and of Potatoes seventy varieties.

There was seen also a very large collection of hardy annuals, notable among which was a

very good assortment of Tropaeolums, all dwarfs, one or two of which were of great beauty; Ruby King is of a very distinct colour, and worth growing, as is also Carmine King and Empress of India. Godetias were well represented, and about a hundred useful annuals.

In the agricultural department there were represented all the useful grasses, clovers, and fodder plants; some of the latter quite new to this country, and, I believe, not yet in commerce.

The party had a pleasant and instructive day's outing. P. W.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM PITTIANUM.

ON May 8, 1900, H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), exhibited at the Royal Horticultural Society this fine blotched variety of *Odontoglossum crispum*, and it was unanimously accorded a First-class Certificate, its beauty being very much admired. On June 1 this year it was again exhibited, and good cultivation had greatly improved the flower, not only in size and substance, but in the richness of the colouring, and experts pronounced it to be the very best blotched *Odontoglossum crispum* seen up to that date. The title of "the best" is often bestowed on an exceptionally fine form of a favourite species, and probably on each occasion the owners of allied varieties would contest the right to the honour for one of their favourites. But in the case of *Odontoglossum crispum Pittianum* there is evidence that the experts were ready to back their opinions, for had Mr. Pitt been inclined to part with the plant he might have obtained 500 guineas for it; or from another source, 500 guineas for half the plant—a very substantial profit on the 300 guineas for which he purchased it from Mr. Thos. Rochford when it first flowered. But the owner of the Rosslyn collection, so rich in fine *Odontoglossums*, was not to be tempted to part with the best or any of his favourites. At the same time it should be stated that the giving of hundreds for exceptionally fine spotted *Odontoglossums*, or for any unique Orchid, is not such a wild proceeding as the inexperienced imagine. In the early days of *Odontoglossum* growing, when rare plants used to be regarded with fear and trembling lest they should depart this life in the hasty manner they were in the habit of doing before their culture got to be understood, things were different, and to give "a long price" was a very risky transaction. Then growers thought themselves lucky to preserve the plant alive and in fair condition. Of late years the case has altered, and by propagation the hundred or two paid for a plant may be well provided for, and with a reasonable margin of profit, and at the same time the owner is relieved of the anxiety which must always be felt so long as the stock is represented by a single plant. Now *Odontoglossums* are increased slowly but surely, and as each of these fine spotted *Odontoglossums* or other distinct Orchids is unique, there is a property in the stock which even wealthy amateurs are comforted to know. As a case in point, it may be stated that in Mr. Norman C. Cookson's collection at Oakwood, Wylam, the fine *Odontoglossum crispum* Cooksonii has been increased into a small stock, and other rare blotched varieties are now represented by several plants each.

Our illustration (fig. 49), from a photograph by Mr. H. J. Chapman, represents *O. crispum Pittianum* exactly of the real size. The flowers

are white, slightly tinged with rose, the sepals and petals being heavily blotched with red-brown the reverse side heavily tinged with purple. The labellum has a yellow crest marked with reddish lines, in front of which are brown spots on a white ground.

HOME CORRESPONDENCE.

BASIC SLAG.—My experience is as follows:—For light, gravelly soils, sow in autumn, at the end of September or October, at the rate of 4 to 5 cwt. per acre. If it be sown in spring, and drought follows, there will be very little return for the money. If the weather be showery after sowing in spring, there will be a fair return, but not so good as if the basic slag had been sown in autumn. I have applied it to corn, gardens, and lawns, also to pasture land; but I find we get much better results from an application of kainit and Damaraland guano, applying about 2 cwt. of guano and 1 of kainit [to acre?]. I may mention that basic slag varies much in quality. *G. Fulford, Presdales Lodge Gardens, Ware, Herts.*

— In answer to "Enquirer," last week, p. 140, the manual value of basic slag, which has within the past few years come into such general use, consists in the large proportion of phosphoric acid which it contains, this element ranging from 11 to 20 per cent. As a fertilising agent it is very essential that the slag be in the form of an impalpable powder, because in this condition the phosphoric acid is easily assimilated by plants, and is attacked without difficulty by carbonic acid and other vegetable acids produced by the decomposition of organic matter in the soil. One ton weight will contain about 226 lb. of phosphoric acid, and 1,120 lb. of lime; the latter substance will be of a caustic character, and will act on the nitrogen of the soil probably more quickly than the lime in superphosphate. The phosphoric acid in basic slag acts more slowly and over a longer period than the same element in superphosphate. It is a suitable manure for providing the soil with a lasting supply of phosphoric acid, especially in the lower layers of the soil, such as Vine-borders; this fertiliser will ensure the healthy development of fruit-trees, Vines, ornamental trees and shrubs. It also provides a good dressing for lawns, cricket-grounds, and paddocks, as it encourages the growth of Clovers and the finer quality of grasses. Basic slag may be used in preference to superphosphate on all wet, peaty, and rich garden soils, on account of it containing free caustic lime, which neutralises the organic acids of the soil. But it must not be used in combination with sulphate of ammonia, because it sets the ammonia free, and causes a loss of plant-food. Nitrate of soda may be mixed with it. When applied to grass and Clover, basic slag frequently produces very striking results, not only in the increased yield, but in the permanent improvement in the quality of the herbage, and the development of the White Clover, which had previously, in many cases, been hardly noticeable. In some cases where the application of basic phosphates has not seemed to produce any marked effect, we think it probable, from results obtained in the grass experiments at Rothamsted, that the soil is deficient in potash. For example, on a plot of permanent grass to which no manure of any kind has been applied for forty-five years, the average yield of hay is about 1 ton per acre; the plot to which basic slag alone is applied gives an increase of but 1 or 2 hundred-weights per acre over the unmanured; while the plot to which a mixture of basic slag, and 1 cwt. sulphate of potash, is applied each year, yields an average weight of over 2 tons of hay per acre; and the quantity of Clovers and vetchlings in the mixed herbage is, under the influence of the potash, more than trebled. The phosphate of lime contained in basic slag is not so soluble as that in superphosphate, and should, therefore, be applied

somewhat earlier. On pasture and meadow-lands autumn or winter applications at the rate of 5 to 10 cwt. per acre are usually the most economical, but the full effect of this will not be by any means exhausted in the first year—indeed, the effect has often proved more apparent the second year than the first. On arable land and in gardens, the most suitable time for the application will generally be previous to ploughing or digging, thus giving time for the decomposition of the material, and the liberation of the phosphoric acid for the use of the growing plants. *J. J. Willis, Harpenden.*

MEALY-BUG.—I have a vine of ripe Grapes, Hamburgs, Muscats, and Frontignans, which are attacked with mealy-bug. When the

twenty-three years, and will chiefly be remembered for the *Lapageria* which he grew so well, the variety *Lapageria rosea superba* (Nash Court variety) having been introduced by him some years ago. The magnificent fernery, designed and arranged by Mr. Humphrey, still remains a grand example of his work at Nash Court. *Wilmot H. Yates, The Gardens, Rotherfield Park, Alton, Hants.*

PHYLLOSTACHYS NIGRA IN FLOWER.—Several plants are in full flower here, but at present there is a considerable number that show no sign of flowering. It will be of interest to observe if all plants of this species in England flower this year, according to tradition. *Charles Ellis, Frousham Hall, Shottonmill, Haslemere, August 17.*

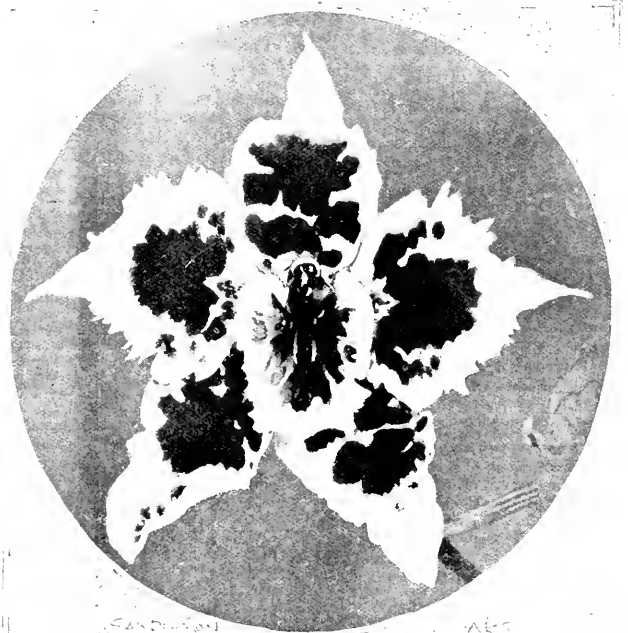


FIG. 49.—*ODONTOGLOSSUM CRISPUM* VAR. *PITHANA*. (SEE P. 153.)

(From a photograph by Mr. H. J. Chapman.)

Vines were dormant, I had them washed with hot water taken at boiling-point to the vineery; after that the Vines were scraped of all loose bark, and thoroughly washed with Bentley's Soluble Paraffin Oil at double strength. The house and glass were washed with hot water and the insecticide mentioned above, in the hopes that the pest might be got rid of; but now the Grapes are ripe, the pest is showing again, and getting into the bunches. I am painting every visible sign of it with methylated spirits. Can I do any more in the way of evaporising, or in any other way, without doing any injury? *Anxious One.*

MR. GEORGE HUMPHREY is shortly relinquishing the charge of the gardens at Nash Court, Faversham. Will all the old Nash Court "boys" who wish to show some mark of appreciation to their old chief on his approaching retirement, kindly communicate at once with Mr. G. Burrows, The Dell Gardens, King's Norton, Birmingham; or the undersigned. Mr. Humphrey has had charge of the gardens at Nash Court for the past

FRUITLESS PURSUIT OF MELONS.—I have often noticed the comments and criticisms of the *Gardeners' Chronicle* upon English and foreign trade, and send the following note as showing that there is at least some room for improvement. On the morning of July 29, at 9.30 A.M., my employer, Col. A. F., said he and his friends would lunch on the lawn at 1 o'clock (a lovely day with outside temperature about 72°), and would like a nice English Melon. I was asked to go into the town (Bournemouth), and get one at any price. At 10 o'clock I saw my neighbour, Lord P.'s gardener. "Have you got a good Melon to spare?" "No, I shall not have one ripe for another fortnight." I next went to our greengrocer, A. B. "A nice Melon, please." "Sorry I have not such a thing; the last one I sold was last Wednesday, to a young lady who rode in from Christchurch." I next tried George Day & Co., wholesale fruiterers, with van out in the street. "Hi! any English Melons?" "No! there is not one in Bournemouth." I then tried another first-class greengrocer (Mr. L.). "A nice Melon, please."

"I am very sorry. Melons are so dear I cannot do anything with them. They are 4s. 6d. first hand in Covent Garden Market, and there is no sale for them in Bournemouth at the price we have to charge." The next shop I tried was Mr. G. L. S., the largest and most influential firm, having three shops in the town. "A nice Melon, please." "Very sorry we cannot oblige you, there is not such a thing to be had in Bournemouth." Becoming desperate at 11 o'clock, I went to L. T. & Co., saw the manager, and explained the matter. He said, "Have you tried Lord C.'s gardener?" and kindly telephoned to him. "No," he replied, "I have not one; they have failed me this season." At 11.30 I went to Slaymaker's wholesale depot. "I want a nice Melon, please, and do not mind what I pay for it." "Very sorry, but you will not get one anywhere in Bournemouth. I have not had one in

English one to compete with them. On July 26 there was not a dish of green Figs to be bought in Bournemouth for any price I offered for them. *William Gosling, Lisle House Gardens, Bournemouth.*

BOUSSINGAULTIA BASELLOIDES.—In reply to the inquiry by "A. J. L." on p. 110, I have found this rapid-growing climber flower and succeed best generally when grown in quite a cold house. If subjected to even a moderate amount of fire-heat it becomes very weedy, and will not flower. "A. J. L." does not give the age of his plant, but he must not expect it to flower much until five or six years old. I have not seen the plant growing out-of-doors in this neighbourhood, but am growing on a young plant, which I intend planting in a warm corner next spring. *A. C. Bartlett, Penarrow Gardens, Cornwall.*

have published illustrations of such a wealth of beauty and interest in gardens all over the country, many must, like myself, have longed to be allowed a glimpse at places which would do so much to improve the taste and knowledge in gardening. It seems to me within the range of practical politics that a general scheme should be devised, by which garden-owners would admit the public to view their gardens against payment, for the benefit of the Gardeners' Benevolent Fund. A charge of, say, half-a-crown a head would exclude the rough element, and would not be considered too high by garden-lovers, who are attracted, not by eriosity, but by real interest. Would it not be possible to form an association of owners of gardens, who would join to bestow by these means upon those interested in beautiful gardens a great pleasure, a valuable instruction in taste and knowledge, and pos-



FIG. 50.—GROUP OF WATER-LILIES, AS EXHIBITED BY MR. HUDSON, GR., TO LORD OF ROTHSCHILD, ESQ., AT THE BRILL HALL, WESTMINSTER, AUGUST 13, AND REPEATED AT SHREWSBURY, AT JUNE 21 AND 22, (SEE PP. 141, 160.)

my place for a long time." "Is it any good to cry D., of the Triangle?" I went there at 11.15, more than a mile from home, saw a personal friend, a member of the Gardeners' Mutual Improvement Society, explained matters, and he kindly telephoned to some different market-growers, at a radius of more than 3 miles out, but not one of these had an English Melon. I got home at 12.40, and as a last hope sent my son to Hales, Dancy & Co.'s depot, to ask if any English Melons had come down by train today. "There are no Melons for love or money," was the reply. At 1.20 P.M. my employer saw me on the lawn. "Gosling, where is the Melon?" said he; and much disappointed I was to tell him that his money would not buy one, and returned to him the 21, as time would not permit me to send to Gloucester Road, South Kensington, London, as I have done before in like emergencies. Yet I am sure I saw tons of Water-Melons in Bournemouth, and not an

RECORD WEIGHT FOR STRAWBERRIES. In the *Gardeners' Chronicle*, August 17, p. 126, Mr. Snell asks, "What is the record weight for ten Strawberry 10's?" I have never heard the record, but I may tell him I exhibited a dish at the Dudley Spring Show of 1900, twelve fruits of which weighed 20½ oz.; one weighed 2½ oz. I thought such fruits would surely call forth some special commendation from either the judges or the executive; they, however, did not, so evidently the record was not reached. *W. R. Jennings, Caledon Park Gardens, co. Tyrone, Ireland.*

GARDENS AND THE GARDENERS' BENEVOLENT. In the *Gardeners' Chronicle* for August 3, I read that the Right Hon. J. T. S. Foljambe had thrown open his gardens to the public at a charge of 1s. per head, for the benefit of the Gardeners' Royal Benevolent Institution. Since your own journal, and, especially latterly, *County Life*,

sibly a considerable revenue to an excellent charity? *Hortulans.* We think many more owners would gladly throw open their grounds for the benefit of the garden charities if the suggestion was made to them. *Ed.*

YARROW ON LAWNS.—I must confess my surprise at the crusade against Yarrow on lawns, see note on p. 138. Here at Kew I not merely encourage it, but intend sowing it extensively. It frequently mown, it forms a soft and elastic turf, and is singularly resistant to wear and tear on lawns much trodden upon. But its great merit is its tolerance of drought. Years ago I remember a lawn in Gloucestershire where, during a dry summer, the grass was burnt up to a sickly brown, while the patches of Yarrow stood out in emerald-green in vivid contrast. Of course, those who are the happy possessors of a deep and fertile soil can please themselves; but beggars cannot be choosers, and I am convinced that

o light, gravelly and calcareous soils, Yarrow in dry summers is a splendid stand-by. Chamomile is perhaps equally good, but more difficult to establish. After all, the question is one which will settle itself. In old turf on a poor soil, I doubt the possibility of eradicating the Yarrow; and I do not envy the man who is bold enough to try to start afresh. W. T. Thiselton-Dyer.

THE SEASON OF WASPS (see ante, pp. 114, 138).—Last year we were swarming with wasps, and as your correspondents say, taking their nests made little or no appreciable difference in their numbers. Having suffered so much we made war on the queens when they first came out from winter quarters, and killed a large number; in the last three weeks of May alone we killed over 150, with the result that, at present, there is scarcely a wasp to be seen. On warm, sunny days, from the latter part of February to the middle of April, the queens are easily killed, as then they are not strong on the wing. A little observation will soon reveal the best hunting grounds, but the queens invariably show a marked preference for the flowers of Angelica. Our County Council Bee Expert told me that last season, in the west of Cornwall, the plague of wasps assumed a serious aspect; and a gentleman offered a £d. for every queen brought to him, and to his astonishment over 300 were brought in a single day. A. C. Bartlett, *Pencarrow Gardens, Cornwall*.

—Since my last note was written to the *Gard. Chron.*, stating that I had taken 127 nests from July 10 to August 1, I have destroyed forty-nine others, and still they come. Mr. Wilkins, on p. 138, recommends turp or tar; the former I have not tried, but the latter is an old and tried friend of mine. The only objection I have to tar is, that the sun must have set before it can be used, which makes it very troublesome and most inconvenient, especially in our case where most of the nests are amongst reeds and rubbish in the banks of "Bocks" and of the river, where they are so difficult to find at night. Cyanide can be used when the nest is found. I prefer it. By dissolving the cyanide, and soaking a piece of cotton-wool in it, and pushing it well into the hole, the danger of poisoning is reduced to a minimum. Mr. Roberts' plan (see p. 138), of poisoning I have also tried with advertised wasp poisons, but do not think it worth the time it takes. I have found more dead wasps in one nest taken by the cyanide, than in a whole season with poisons. I prefer a tempting mixture hung about in bottles, to poisoning. Honey and water, for instance, with a dash of sour beer and vinegar, which they prefer to any fish or carrion, although I am well aware they like the e. It is quite evident Mr. Roberts has not the number of wasps to bother him that we have, or he would be glad to adopt the more practical method of killing them at home. I think Mr. Roberts will do well to hesitate before undertaking to keep them down in any garden, by commencing in time. We begin with the advent of the queens, which I think is as early as possible. This year the men in the garden were paid for seventy-two queens. C. Simpson, *Nechy Hall Gardens, Ripon*.

WALL GARDENS.—I thank Mr. Jenkins for the reply to my enquiries respecting a wall-top garden. The following particulars will help further to describe my case:—(1). The heavy flat coping-stones on the wall-top cannot be removed or altered. (2). Only one row of bricks will be put on edge on each outer edge of the wall; they can be bedded and pointed in mortar, so that the rain will be retained in the shallow layer of soil a little longer than if the joints were quite open. (3). The wall-top is fully exposed to the sun all day. (4). The wall on one side is 2 feet above the garden-level, so that the flowering surface of the plants would be easily looked down upon, and there would be 2 feet of the face of the wall for the plants to hang down. On the other (the N.E.) side of the wall the ground is 6 feet lower than the top of the wall. (5). In asking

for plants suitable for "such a position," I mean, such as would thrive and flower well in 4 inches deep of soil, on a base of hard stone, and with full exposure to sun and wind. I thought there would be at least a score of beautiful hardy rock or alpine plants capable of enduring such conditions. The Houseleek, for instance, seems able to live on house-roofs with little or no soil; but I desire much more decorative, floriferous plants more after the type of *Sedum acre aureum*, *Aubrietia Leichtlinii*, *Phlox setacea*. As for the appearance of the bricks, I calculated on the plants spreading over their tops, and covering at least their outer face, even if not hanging down to the ground. By dividing the space between the bricks into separate compartments a yard long, one might supply each with just the kind of soil required. *Stouecrip*.

THE RIPENING OF FRUITS AND THE WOOD.—Having read with much interest your extracts from the *Comptes Rendus*, from a paper by M. F. Kévessé (p. 114), on the proportion of water in relation to the ripening of woody plants, the writer seems to think that a fruitful year follows a year of drought, or deficient rainfall. My own opinion is, that a deficient autumnal rainfall is a potent factor in an unfruitful year. Our rainfall in September, 1899, was 1.79 ins.; in October, 1.98 ins.; in November, 3.70 ins.; and the year 1900 was a year of general abundance of all kinds of fruits, berries, and nuts. The rainfall of September, 1900, was 0.50 in.; October, 1.59 ins.; November, 1.65 ins.—a difference in the three months' rainfall of nearly 1 inch; and the fruit crop of 1901 is nearly a failure, and the only cause I can assign for it is the want of rain at a critical period of the year, when fruit-bearing trees are making the final effort to store the requisite nourishment to produce a crop of fruit. R. M., *Newbury, August 20, 1901*.

GOOSEBERRY "GUNNER," ALIAS COBHAM.—As prominence has been given to the Gooseberry shown at the Drill Hall on July 20 as "Cobham," and given provisionally an Award of Merit, it should now be equally well known that the question of its identity was again raised at the last meeting of the Fruit Committee on the 13th, and ample evidence was then forthcoming that the variety was, after all, the old yellow hardy "Gunner." I had, prior to the meeting of the committee on the 20th ult., looked over the remarkable collection of one hundred varieties shown by Messrs. Veitch & Sons, and found Gunner as being exactly like Cobham, but the fruits were not quite so large as were those from Cobham. Because of that similarity, the award made was provisional, other members (including the Chairman, Mr. G. Bunyard), undertaking to compare "Cobham" with Gunner of their own stock. The result has been to satisfy the committee that Cobham is the same as Gunner. In consequence of that knowledge, the award will appear henceforth as being made to Gunner. Possibly it will be said, why not have withdrawn the award altogether? That is a fair question to put, but the award was made to the variety irrespective of correctness of name or otherwise, because of its excellent flavour, the committee recommending it for such reason. Dr. Hogg in the *Fruit Manual* describes the flavour of Gunner as "first-rate." It cannot be too well known that whilst a heavy cropper, it has much excellent fitness for the dessert. It is also of good size and handsome appearance. Certainly, like Howard's Lancer, it is a good thing too long overlooked. A. D. [As there was no indication on the list of awards supplied by the Society that the award to this Gooseberry was made provisionally, the presumption was that the committee considered it to be distinct. Ed.]

ENQUIRY.

"MANCHESTER MANURE."—Where can this be obtained? P.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

AUGUST 13.—*Present*: Dr. M. C. Cooke, in the Chair. Rev. W. Wilks, Prof. Hartog, Messrs. Gordon, Odell, Chapman, Hudson, Worsley, Bowles, Drury, Saunders, and Dr. Masters.

Iris Leucos Discolor.—Mr. WILKS brought leaves of a German Iris thickly beset with brown spots, which become confluent, and eventually bring about the death of the plant. Dr. Cooke identifies the fungus as *Heterosporium gracile*, and recommends spraying with sulphide of potassium or ammoniacal solution or copper. All diseased leaves should be forthwith burnt.

Banana Disease in Egypt.—Mr. LIOSEL SAUNDERS made some enquiries about this, but, in the absence of specimens, the Committee could not pronounce an opinion.

Cereopogon debilis.—Mr. ODELL exhibited specimens of this curious stove climber from the Zambesi.

Lycoris squarrellosa, and other flowers.—Mr. WORSLEY showed flowers of this species which turn of a slaty blue when exposed to the light. He also showed flowers of a *Hippeastrum* with rosy, acute, perianth segments, traversed by veins of a deeper colour. The leaves are produced some months after the flower is expanded. The filaments are more exsert than in *H. stylissum*, to which it is nearly allied. From the same gentleman came flowers of the single and double varieties of *Zinnia Haageana*, and of *Tagetes patula* nana. Seeds from this latter form, known as Cloth of Gold, produced pure yellow flowers, and some had, except in their dwarf habit, reverted to the large African Marigold. Both single and double forms were observed. Mr. Worsley also alluded to the variation in the *Dahlia*. Seeds of a white-tipped variety produced 70 per cent. of self-coloured flowers, and 30 per cent. of flowers varying in colour from red and yellow to white.

Dioscorea Crocota (Crocus).—Mr. BOWLES showed diseased crocus, which were referred to Dr. Cooke for examination.

Profilaria Aconite.—Mr. BOWLES also showed flowers of an *Aconite*, in which the stamens and carpels were absent, and in their place were secondary flower-buds, each with five green sepals, no petals, numerous stamens, and generally no carpels.

Phadanga major.—Mr. BOWLES exhibited fine specimens of the so-called Rose Plantain, in which the bracts are replaced by tufts of large leaves.

Mandragora officinalis.—The egg shaped fruits of this species were also shown by Mr. BOWLES.

Osmunda regalis.—Mr. DRURY exhibited fronds of an entirely new type of *Osmunda regalis* recently found in Co. Kerry by M. M. A. Cowan, of Penicuik, and W. Boyd, of Melrose. Nine plants in all were found, six of which were fertile, and three barren, the latter being more finely cut than the former, and apparently forming the plumose type of the species. In both forms the usually simple pinnales, with quite smooth edges, are deeply lobed on the edges on the lower and larger divisions, which, towards the upper part of the frond, merges into a distinct and thorough tertiary pinnation, rendering the frond extremely handsome. The fertile spores consist also of rows of bead-like sporangia, while normally these are only slightly lobed. Mr. Drury has named Mr. Cowan's form *O. r. decomposita*, reserving the naming of Mr. Boyd's form until its distinct character is confirmed.

THE CO-OPERATIVE FLOWER SHOW.

THE National Co-operative Festival and its allied agencies require a whole week at the Crystal Palace to carry out the full details of this great industrial gathering, for there is an exhibition of trade productions, meetings of various bodies, and such-like. The sixteenth One and All Flower Show occupied, as usual, two days, and on this occasion, owing to the interior of the Palace being occupied by a Military Exhibition, a huge tent was erected on the terrace, which was an eighth of a mile in extent, and right along the length of it there was width enough for six rows of tables arranged longitudinally. The exhibits were seen to better advantage under the white canvas than in the glass-roofed nave of the building; but the somewhat coarse shingle on the surface made walking about the tent a trying and exhausting process.

The entries in many of the classes were less numerous than usual; but this can be accounted for on two

grounds—first, the incidence of the season, which showed itself in some districts in a prolonged drought, followed by heavy storms, immediately preceding the show, which in many places, to materially damage not a few subjects which would otherwise have appeared on the exhibition-table; and, secondly, through the withdrawal by the railway authorities of those cheap facilities for travelling to London afforded in previous years. But even with these drawbacks, the flower show maintained its reputation for extent and interest, the mighty, myriad samples of vegetables which were seen at the earlier exhibitions, before the working-men cooperators had been taught by a series of object-lessons the particular lines of quality to which the judges gave their preference, have almost entirely disappeared, and the work of the judges now being to select the best from good average character, than in the old-time practice of eliminating the worst as a preparatory process.

From the gentlemen's gardeners and amateurs of means, the bulk of whose productions make up the first day's exhibition, good general quality may be expected, and it was abundantly forthcoming. The fact that the specimen plants have to be placed on tables, instead of in their beds, is, however, to be feared. Ferns, Fuchsias, Begonias, Pelargoniums, and others of ordinary greenhouse culture were all in good character. Then there was good fruit, as represented by Grapes, Peaches, Nectarines, Melons, &c., and also ordinary and dessert Apples and Pears, though the latter were fewer than usual. Vegetables were numerous and of good quality, the quality of the Potatoes recalled the days of the series of International Potato Shows formerly held at the Crystal Palace, when Potato cultivation for exhibition purposes was elevated almost to a fine art. In the cut flower classes good quality was generally apparent, and of those to subjects in which the florists takes a keen interest, the general quality displayed had about the most approved.

On the second day of the Flower Festival came the rush of the working men Co-operators from all parts, with the productions of their gardens. Cut flowers and vegetables largely preponderated, of the plants which are brought with great care from long distances, few, in all probability, found their way back again. Annuals in pots were both numerous and varied, and in the class for the outdoors, Carter's Brilliant Saturnia was a very desirable addition. *Coccoloba laterifolia* among yellow annuals, *Larrea grandiflora rubra* among the red-stemmed one as among the best for pot-culture. Some, such as *Coccoloba Drummondii*, *Salpiglossis*, *Nicotiana glauca*, &c., are too tall in growth to be effective, but, in all probability, many other green and/or conditions calculated to induce a display of growth.

Sweet Peas abounded, as represented by numbers it was the most popular flower in the entire exhibition. Indian Pinks were a charming feature, and it says something for the seed distributed by the Agricultural and Horticultural Association that the quality was good all round.

Few exhibitions entail more exhausting labours upon the judges than the one and all Flower Show. The Educational Flower Show, inaugurated by the Comtesse of Warwick, was somewhat confusing and disappointing. It was the first attempt, and the details must not be too severely criticised in consequence. There seemed to be a lack of sequence in the arrangement of the classes, and this made it difficult for an ordinary visitor to grasp the full unaidedness of the subject. Then of the production class, the general effect was marred by lack of intelligent arrangement. Added to this the quality of the exhibits was not high. Reorganisation of this department of the show is needed. No one appeared to be in special charge of it, so that those interested in this special feature found it difficult to institute comparisons. The idea is a good one, but only when the one and all Flower Show will grow in the future. It was, no doubt, gratifying to the Comtesse of Warwick to see the Hotel at Reading, and individual members of it, so successfully engaged in it in connection with this department.

THE ROYAL SCOTTISH ARBORICULTURAL.

AVL BURNS' COTTAGE THE BANKS AND BRACKS OF BONNIE DOON, ARCHDEACON CALZEAN CASTLE.

The twenty-fourth annual excursion took place last week to the land of Burns, the headquarters being in the old town of Ayr. On Monday afternoon about sixty of the party left Edinburgh for Ayr via Glasgow, on reaching Ayr the number had increased to over 100, several having joined the train by the way. Late in the evening the party all dined together in the Ayr Arms Hotel, Mr. D. P. Laird, of R. B. Laird & Son, nurserymen, Edinburgh, in the chair. A pleasant evening was spent.

During the night a considerable amount of rain had fallen, but regardless of the appearance of the weather, and the heavy day's work in front of them, the party mustered in full force at 8.30 A.M. on Tuesday morning. Their first stop was made in four or five drakes, the first one being occupied by the Earl of Mansfield,

the President, R. C. Munro Ferguson, M.P. Hon. Secs., Dr. Farquharson, M.P., of Torquay, Eugene Wason, M.P., of Hereford, Mr. Edward P. Tottenham, of The Glen, Mr. John Methuen, Edinburgh, Mr. Robert Galloway, the Secretary, and the joint leader of the party, D. P. Laird, Esq. The first stop was made at Alloway Adm. haunted kirk, and the birthplace and monument of Robert Burns, on the banks and bracks of Bonnie Doon; and after carefully examining the cottage where Burns was born, and other relics which are stored in the museum and monument, the banks of the Doon, and the Auld Brig over which Tam o' Shanter sped on his grey mare Meg, after he had looked at the witches in the haunted kirk, were visited; and while a great number of the excursionists were on the Auld Brig, Mr. Brown from Bathgate led off with "Ye Banks and Braces of Bonnie Doon," which was sung by the whole party with a considerable amount of pathos.

When the time came for crossing the Doon, a move was made for Archdeacon's, the residential estate of Miss Cathcart, and as the party passed along the avenue, all admired the woodland beauty they were surrounded with. Conferees of the finest order, intermixed with fruit-trees, their oever and grass well kept, offered Mr. D. P. Laird, Esq. Silver, and Scots Fir. The largest Silver Firs were planted in 1707 by Mr. John Maun, the first member for the Ayr burgis in the British Parliament, to commemorate the union of Scotland with England, and on this account is known to this day as the Union Avenue. Some of the Silvers girth 5 feet 9 inches 3 feet up the stem, and the good Larches are 4 feet 6 inches to 5 feet 6 inches tall. One of the oldest Scots Firs is known to be over 200 years old.

In front of the mansion-house are some very large old Yew Trees, and a very fine specimen of Betula alba, planted 1520, and now 200 ft. or less than 100 ft. tall. A very fine tree of the Scotchian tulip-tree was in flower on the lawn, and a number of other good things by far too numerous to mention. After thanking Miss Galloway for the hospitable reception, Mr. Galloway, who is factor in the estate, and who received the party, the drakes were remounted, and in due time arrived at Calzean Castle, the residence of the Marquis of Ailsa.

The party was welcomed by the noble lord of the mansion himself, and entertained to a sumptuous lunch. The exploration of gardens and grounds took place after lunch, first and foremost among the grounds being the arboretum, which is situated in the garden. Mr. Page, the estate manager, Mr. Dalziel, forester, and our old friend, Mr. Murray, the gardener, with such a grand selection of guides, and a place like Calzean to wander about, the best possible use was made of the time at the disposal of the party. Some wonderfully well grown stems of Beech were seen. Silver and Scots Fir were in great evidence. Some grand old trees, one of the Silvers girthing 11 feet 2 inches 2 feet up the stem. A peculiarity about the old Larch was that most of them had from three to six stems from about 4 feet up, and a considerable amount of good timber is thus got off one tree. But why it should be so is hard to say, unless the tops had been nipped off at the young trees when about 2 feet high. This forming a small trunk at each end of the main trunk, it would seem to have done well in this particular instance. Yet I hardly think that in practice it could be followed. There are also some very fine old yew trees about Calzean.

After wandering about the woods and dells for some time, the gardens and pleasure grounds were next in speed, and one of the most striking features about the place, and most all other places in Ayrshire, is that the system of soil-draining is almost a thing of the past. All borders and beds are filled as naturally as possible, hardy perennials and the best Conifers being very much in use.

In the terrace gardens, Hollyhocks were in abundance, with no sign of disease about them, Heathcote's candelabras is very largely used, and with good effect, indeed, hardy herbaceous plants and bulbs of all kinds are brought into use, and groups of all hardy and tender plants and annuals, and the effect is simply charming.

Fruit outdoors, and under glass are always good at Calzean, but if anything, they are better than usual this year, grapes being uncommonly good. Doubtless we shall see some of them a considerable distance from home in a few weeks' time with a red bucket on them.

The pond with its aquatic plants and fish, and surrounding well gardens containing fine shrubs and conifers, Tree Ferns, and hardy herbaceous plants, though hardly in the line of arboriculturalists, amply rewarded the visitors for the time spent in traversing the delightful scene.

A very large area of land is under plantation at Calzean, and a well-stocked nursery from which a considerable amount of planting is done every year. A surrounding well-arranged wood yard with no lack of machinery, where a great amount of the timber grown on the estate is manufactured for different purposes, brought a most enjoyable and profitable day at Calzean to a close. A chair was given by the Marquis of Ailsa and those who helped to entertain the party.

The drive from Calzean to Ayr along the stone road was very delightful, and the weather throughout the day was charming.

The party dined in the King's Arms Hotel at 8 P.M., and immediately after the dinner the general meeting of the Society took place.

(To be continued.)

BISHOP'S STORTFORD HORTICULTURAL.

AT FIRST IT. The thirty-second summer exhibition was held at The Grange, Bishop's Stortford, the residence of J. Barker, Esq., an ideal spot for a flower show. The increasing success of the Society is owing to the indefatigable Secretary, Mr. W. Smith, and a committee of workers. Not only are cottagers induced to grow produce well for exhibition, but the Society rents allotments for them, and offers good prizes.

One large tent was almost devoted to the ladies' exhibits, the table decorations, no fewer than thirty tables being laid out.

Groups for effect were not very numerous, but those that were successful were of good merit. Sir J. RIVIN, Bart. and Mr. Richardson, was 1st with a beautifully arranged group in which Orleans figured largely. Mr. C. GORDON, Mr. Clark was a good 2nd.

At this show there is good competition with groups of tuberosus-rooted Begonias. Mr. W. SMITH was a good 1st, with splendid blooms, and variety. Mr. A. TAYLOR was 2nd. For groups of early flowering Chrysanthemums, Mrs. MESER, gr., Mr. Lodge was 1st. The classes for stove and greenhouse plants were not strongly represented, though some nice plants were staged. Mr. C. GORDON was 1st, and Mr. J. BARKER (gr.) Mr. G. Booth, 2nd.

For hanging baskets, a feature at this show, Mrs. A. TAYLOR and Mr. Smith were the leading exhibitors. For dinner-table decorations seven prizes were awarded, the 1st going to Miss F. C. KNORR, Sadron Walden, who had Begonias, grasses, and Eleocharis, but we certainly thought the 2nd prize exhibit equally good. This was shown by Miss H. CLAYDON, Sadron Walden.

For twenty four varieties of Early flowers, Messrs. PAPE & SON, Chesham, were 1st. In the smaller classes, twelve, there was a strong competition. Here Messrs. MESSES, SMITH and WADE were the principal winners. Messrs. SMITH and WADE being best in the class for 12 varieties.

TABLET.

There were excellent grapes and good Peaches. The collections of eight dishes of fruit were very good. Col. ARCHER HOLLIES, gr., Mr. HARRISON was 1st, having beautifully colored Grapes, and good Peas and Peaches. The 2nd prize going to BAKER, Esq., M.P. (gr.), E. Hoobick.

For baskets of fruit of ten varieties, Col. A. HOOBICK and Sir J. RIVIN were the winners. Black Hamburg Grapes were excellent, Mr. J. BARKER being 1st. For white grapes, Mr. R. C. GOSLING had fine Muscats of Alexandria. For the best flavoured Melons, Mrs. MESER, gr., Mr. Lodge was 1st, with Syon Perfection. Col. A. HOOBICK, Messrs. SAPE & SONS, had the best Peaches. Sir J. RIVIN, and Messrs. BARKER and HOBBINS, best Nectarines.

VEGETABLES.

For a collection of eighteen varieties, Mr. J. BARKER was 1st, having grand produce, Mrs. A. TAYLOR, 2nd. For nine dishes, Messrs. WALLIS, CLAYDON, and GALE were the winners.

MISCELLANEOUS.

Messrs. PAPE, CHELSEA, and CLEMENTS Highgate, N., staged the banks of herbaceous flowers, Mr. MORTIMER, knowledge, Fulham, had Dahlias, the Messrs. RIVERS, Sawbridgegorth, a large collection of fruit-trees in pots laden with fruit, Mr. RIMSEY, Waltham Cross, had Roses, and Mr. AMOS PERKY, Wincbamore Hill, good Water Lilies.

THE ENGLISH ARBORICULTURAL SOCIETY.

REHBY MILTON PARK ETON CASTLE THE CONIFERS AT OGDON, BRAYOR CASTLE THE DINNAGE.

August 14, 15, 16. The Society held its annual excursion on the above dates, in the neighbourhood of Peterborough, under the presidency of Professor Somerville, Cambridge University.

On the first day a visit was paid to the historic mansion and park of Burglady, the magnificent seat of the Marquis of Exeter. The park of Exeter contains some splendid Oaks, Spanish Chestnuts, and Wyeh some splendid Oaks, Spanish Chestnuts, and Wyeh Elm; the latter being one of the small-leaved varieties of this puzzling genus, several trees were measured with an iron level of timber, the King Oak being a remarkable tree, with a clean stem of over 20 feet, and a girth of 10 feet at 5 feet up. The chief features of Burglady, at the present day, from an arboricultural point of view, however, are probably its Lime avenues and Spanish Chestnuts. The avenue facing the main entrance terminates in a handsome gate, leaving a clear path of considerable extent in front of the house. The Spanish Chestnuts are of vast sizes, many of them being over 20 feet in circumference. Fortunately, in some respects, perhaps, their ornamental is greater than their commercial value, as was indicated by one specimen tree which had blown down, and been sold for 121, which sum was recomputed by the buyer rather than meet the expense of removal and re-plantation.

Of great historic interest is the Lime Tree near the house, planted by Queen Elizabeth, which was 100 ft

ASTERS were represented by the Victoria variety, the best twenty-four blooms come from Messrs. CHAPMAN & SON, BOLDING, LEADS.

The best twenty-four bunches of hardy flowers, as not fewer than twelve varieties, were from Messrs. HARKNESS & SONS, Messrs. KING, Duffries, were 2nd, and LOB WALKER-WINSLAND.

S. J. PARS were shown in several classes, and some very fine blooms for the season were shown. Mr. W. L. CRAW, Market Harborough, got 1st with *Reddy, Wonder*, & Mr. W. STRONG-SMITH, Cheswilde, 2nd. The Eekford Challenge Cup for thirty-six varieties was not awarded the judges did not think the flowers good enough. The best eighteen varieties of *Eckford's Sweet Peas* were staged by Mr. R. L. KENNON, Oswestry, and Mr. W. L. CRAW won Mr. Sydenhams prize for twelve.

VEGETABLES.

Whilst in some respects there was a falling off in the number of competitors in some of these classes, in others three former and able growers being absent, there was still to be seen superiority in many of the dishes, in spite of the summer having been one of exceptional difficulty to vegetable growers. Lord ALDENHAM stable gardener from Elmstree, Herts., was again the champion exhibitor, the three collections with which he took the 1st prizes amounted to twenty-three dishes, and were about as fine and perfect as vegetables well could be.

In Messrs. Sutton & Sons's competition for nine kinds, Mr. BECKETT's group comprised very fine Ailsa Craig Onions, Early Giant Cauliflowers, Prizetaker Leeks, Perfection Tomatoes, Tender and True Parsnips, Windsor Castle Potatoes, Autumn Peas, New Improved Giant Carrots, and Old White Celery. Cauliflowers were the weaker article, but the season, like in most instances, was unfavourable for these vegetables. A very choice 2nd was another first-class grower, Mr. CRAW, gr. to W. HUDSON, Esq., Marlow, Bucks.—some day no doubt we shall see this good gardener turning the tables on Mr. BECKETT. Just now it is a case of 'look meeting Greek.' This exhibitor had very fine Leeks, Solid White Celery, Supreme Potatoes, Duke of Albany Peas, Perfection Tomatoes, Tender and True Parsnips, Early Craig Onions, and Cauliflowers. Mr. W. BLOW, gr. to the Earl of CAPEMARE, Highlee, Castle, was 3rd, having capital samples. Mr. ASHTON, gr. to the Earl of LATHOKE, Okeokk, was 4th; and Mr. L. BARRING, gr. to A. HENDERSON, Esq., M.P., Buscot Park, Berks., was 5th. There were seven collections.

Messrs. Jno. Calder & Co.'s Prizes.—These were offered for collections of six kinds, but only four were competitive. Mr. BECKETT, again 1st, had fine Ailsa Craig Onions, Supreme Potatoes, Striped Runner Beans, White Celery, and Early Autumn Cauliflowers. Mr. BASTIN was 2nd, having Onions, Celery, Runner Beans, Potatoes, Cauliflowers, and Tomatoes. Mr. ASHTON was 3rd; and Mr. REARD, gr. to Lord CAPEMARE, Bredley Park, 4th.

Messrs. Webb & Sons's Prizes.—These were offered for collections of eight kinds of vegetables. Mr. BECKETT with this performing what may for the purpose be called the 'hot trick,' as this made three 1st prizes for collections. In his group were seen very fine samples of Exhibition Runner Beans, Mastfield Court Grand White Celery, Jubilee Tomatoes, Meteor Potatoes, Grand Exhibition Runner Beans, Mastfield Court Grand White Celery, and good Carrots. Mr. ASHTON was 2nd with fine exhibits, especially Progress Potatoes and Exhibition Peas. Mr. BASTIN was 3rd, and Mr. REARD 4th.

There were but two dishes of Tomatoes shown in the EHC's class for any sample of their own sending out, the best coming from Highlee Castle.

There were but one dish sent of the Firm's Golden Butter Beans, Mr. SELLER, gr. to Col HUDKINSON, Ross, having the best.

Messrs. March & Co.'s Class.—But two competitors entered in the class for twelve dishes of vegetables arranged by these local seeds-men. Mr. E. WALKER, gr. to Sir W. HONYMAN, Bart., Chestel Church, was 1st; and Mr. J. BULL, gr. to Captain B. F. G. Shenbury, was 2nd. There were four collections of six dishes, the best coming from Keepling, gr. to the Hon. M. C. HERBERT, Wellington, and No. Pine Elm, Mr. E. WALKER had the finest dish of Runner Beans. Mr. LEITH coming 2nd. Mr. HOESPOOL, and Mr. BEARD, were again 1st and 2nd with three Cauliflowers, the 1st one being exceptionally good. Again they took the same places out of seven exhibits, with six Carrots; but with six Parsnips Mr. S. COLE, gr. to Lord SAUNDERS, Althorp, was 1st. Mr. ASHTON coming 2nd. Mr. LEITH had the best Onions, Messrs. March & Co. got the best long, best places with White Turnips, and also with Tomatoes, the former having Fulgiate and the latter had Royal Leigh Green. With Celery, Mr. GRINDROD, gr. to T. BALES, Esq., Herford, was 1st, having good Bibba's White Dolans. Mr. COLE coming 2nd with Standard

Beetor. There were eight potato dishes of Potatos, Mr. REARD coming 1st, with very handsome samples of Windsor Castle and Ideal. Mr. COLE coming 2nd with the same varieties.

The *Sally* class was—For each smaller prize there were three collections of six dishes, the best coming from Mr. W. POPE, who was very strong with fine examples of Mammoth Cauliflowers, Ideal Potato, Ailsa Craig Onions, Inferno Gigan Carrots, Autumn Peas, Striped Turnips, and White Celery. Hollow Crown Parsnips, Ever-true Cucumbers, Perfection Tomatoes, Best-of-All Runner Beans, and Blood Red Beet. Mr. HOESPOOL was 2nd, and Mr. ASHTON 3rd.

There was a big competition in the collectors' vegetable classes, the exhibit generally being of great excellence. It is very satisfactory to find at this, the greatest of the province of its kind, where so many lavish prizes are offered for so many things, that vegetables are so well encouraged, that their economic value is fully understood, the work is never undervalued, and
H. P. P.

The fruit classes at Stratbury are invariably well filled, and no portion of the show excites greater interest than among the fruit. This section does, and it has done during the past years, again stand out prominently viz. those for degenerated sweet table fruits and flowers combined, for a collection of twenty dishes of fruit, too many to all save a few growers, who may be counted on the fingers of one hand, and to twelve large and small. Each of the last two classes have also to be decorated with flowers, and foliage.

COLLECTIONS OF FRUIT.

Under this head one of the decorated dessert tables, in which the competition has been keen as usual. The stipulations are that to be in, which is to be by a foot or inches, shall be decorated with fruits, our flowers, plants in pots and foliage. The fruit to be limited to those which are of genuine, but as to foliage the use of the relative value and to be in one kind or fruit being possible. In the selection of prizes, length of exhibit, and the points are those nearly equal. The premier prize in this class was awarded to Mr. G. MULLIN, gr. to Lady HENRY MOUNTFORD, Easton to the Earl of Devon, and a fine and a remarkably even exhibit were shown. The Grapes were M. Muscat of Alexandria, the superior bunches were well matched, and in the form of bunches, the fine bunch, clear in berry, and of ripeness, Black Hambro on bunch, to the large and of colour good, Black Albion, a medium bunch, of colour good; four dishes of Peaches, Belgic good, of colour good and large; Barrington rather large, but not so good in colour. Staying a table, which was a collection of fruit, a fine bush and two stems, which were in size, but well coloured; four dishes of Neectarines, Pine Apple extra good in colour, Pitt on Orange likewise so, Stanwick Elms very fine, the best of the lot, and a good dish of Lord Napier of Melons there were splendid fruits of Heron Lockinge, and a seedling presumably a scotch fish variety, after Sutton's seedling, and appearance of Black Currants, of a fine red in every respect. The total number of points awarded to this table was 115. This table lacked variety, some what, it certainly should have had a dish of Peas.

The 2nd prize was taken by Mr. McDougall, gr. to Sir J. W. PEASE, M.P., Hutton Hall, Gushborough, who was very strong, having greater variety. The Grapes were Black Hambro, and Cape Guillaume, both finely coloured bunches, and of better quality than in these, but weaker in the white class, which were Foster's seedling and Black-bud seedling; two extra fine Melons were put up here, better than on the 1st prize table, these were Yorkshire Beauty and II W. VIMPT, both being grand fruits; a superb dish of Somerset Congress Peas, the fruit being well ripened; four dishes of Peaches, of which the best are these were extra large fruits of Sun Eagle, Golden Early, and Princess of Wales, with a good dish also of Violetta Huxley, the Neectarines were Pine Apple, Lord Sapper, and Spencer, the latter were indeed; the other dish was one of large early Apples, which lost points against its antagonists Peas. The total points awarded were 112, which denotes the best competition.

The 3rd prize was taken by Mr. Goodacre, gr. to the Earl of HERTFORD, Elyton, Castle, who had a good look of grapes, four varieties, in each of which quality preponderated over size, the varieties shown were of white kind, Canon Hall Muscat, Muscat of Alexandria, and of Black, Madrasfield Court, finely coloured, and an excellent bunch of Muscat Hambro, moderately set. Two splendid and well set Muscat were also shown large large fruits of Sun Eagle, Golden Early, and Princess of Wales, with a good dish of early of Violetta Huxley, the Neectarines were staged on the table, these were grand examples of Elms, a remarkable dish, Spencer especially so, and Pine Apple, and so fine. Fig, were represented by a fine dish of Brown Turkey; Peaches by Royal George; Peas by Jules Gogot; Plums by Kirkes; and Apples by Lord Napier, and Early Scorching both good. Total number of points, 103.

The 4th prize went to Mr. Tulliet, gr. to Lord Bernard, Babo Castle, Burbank.
The floral decorations and general arrangement in the preceding class was valued by the judges, as follows:—1st prize, 12 points; 2nd prize, 10 points; 3rd prize, 10 points; 4th prize, 12 points.

The 5th prize for the 1st prize table with 11 points was comprised of arrangement, and especially so in the blend arranged together with others, the material used being Manilla, and Franco ranosa, both arranged with well coloured sprays of Ampelopsis. Whilst finding amongst the grapes and pines too thick with too good a proportion of Apples.

The twenty dishes of fruit staged within a space of 8 feet by 1 foot 6 inches, divisions included. Fruit, it should be noted, are excluded from this and the following classes, so also are strawberries. Although the pines, Bananas, the grape mill, and the Montey, all of these are put out from a large class to some what straggled. In this case Mr. MULLIN was again 1st and that, too, in a highly creditable manner. The 2nd prize was awarded to Mr. Jones, who was a strong pro-Muscat of Alexandria in grand condition, four bunches, well coloured, heavily shouldered bunches of Black Hambro, Black Albion and Gros Maron, both well finished; Best-of-All Melons, four dishes, well ripened variety, however, would have been better; Peaches, five dishes, consisted of Barrington, Suning Castle, and Bellemeade; and Neectarines of three dishes of Stanwick Elms, extra fine. Total points 121. Here it should be noted that there was a splendid look of variety, Grapes, Melons, Peaches, and Neectarines only being represented, the object in view evidently being to gain the greatest number of points, irrespective of variety. No dinner table would be complete with such a selection of twenty dishes. The 2nd prize was won by Mr. GARDNER, who was not so strong with grapes; his last year of Canon Hall Muscat and Muscat of Alexandria, several dishes, and Black Hambro, and Black Albion in each class. Neectarines here were again first class, these being Pine Apple, Spencer, and Lord Sapper, all of large size and fine colour; Peaches of Royal George, Warburton, Admirable, Raymakers, and Bellemeade; Melons of Frogmore Orange and Sutton's A1, and a fine dish of Somerset Congress Peas. Total points awarded 125.

The 2nd prize was awarded to Mr. Jones, gr. to Mrs. F. NICHOL, York House, Great Malvern, who was a strong pro Grapes, pointing out more than his opponent, Mr. GARDNER. These consisted of Gros Maron, extra fine in berry and bunch, two bunches; the same number of Madrasfield Court, grand bunches, but lacking colour; two Muscat of Alexandria, moderate only; and two more of Black Hambro, extra fine in bunch and berry; Peaches here six dishes consisted of the old and the new class ones, Royal George, Striking Castle, and Violetta Huxley, all of first class quality. Neectarines were represented by two dishes of Stanwick Elms and Melons by Heron Lockinge and No. Plus Ultra. Total points, 121, or one less than in the preceding.

The 4th prize went to Scotland, the Scots must look to their laurels in this class and to Mr. R. CURRIE, gr. to JAS. MAULES WHITE, Esq., Bahndridge, Dundee, the Grapes here pointed slightly less than the preceding, but they were grand, both in berry and bunch, especially so, but they were grand, both in berry and bunch, especially so, but they were grand, both in berry and bunch, especially so, but they were grand, both in berry and bunch, especially so, but they were grand, both in berry and bunch, especially so.

Two or three dishes of fruit in twelve distinct varieties and in not fewer than nine kinds, being an easier class for many growers than the preceding, should have produced a better competition. It was in this instance done by the best grower; this allows more room relative to the preceding class.

Three Mr. P. JORDAN, gr. to the Executors of the late F. COURTNEY, Esq., Impney Hall, Droitwich, was placed first with fine dishes of Madrasfield Court (grand in berry); Muscat of Alexandria and Gros Maron (grapes); two fine Melons, Phinaston (Pine Fig); large but 1st green; good and first-rate examples of Kirke's Plums, and Neectarines. The 2nd prize was awarded to Mr. Thomas, Barmston, gr. to Lord RAY, Rithfield, Rugeley; the grapes were Madrasfield very good, Muscat of Alexandria good and large berries, and Gros Maron, here was the first dish of Maule's Cherries we noted, also excellent Peaches and Neectarines.

Some dishes of fruit open to the county of St. (only) under the same conditions as the preceding, except as regards the number of plants, viz. 11, 6 in, which is rather too small, four lot at least should have been allowed. Mr. LANGLEY, gr. to the Rev. T. M. BUCKLEY OWEN, Tedstone Hall, West Felton, was a good 1st, the grapes here lacked quality for this season of the year, but Black Hambro and Sun Eagle, seedling, both fine in bunch and in berry; Frogmore Peas, Pine Hale's Golden Gate Plums, and Shipley's Anjouet were also noteworthy.

The 2nd prize went to Mr. Phillips, gr. to S. F. KENNEDY, Esq., Eighnton Hall, Tomblad.

GRAPES.

Collections of Grapes, twelve bunches, in four or more distinct varieties, but not more than four bunches of

any one variety, is a popular class at Shrewsbury, and invariably brings another one, even to the novice.

On this occasion Mr. CAIRNS, Balrindley, Dundee, was the winner, and that in splendid fashion, totalling 96½ points out of a possible 112. The Muscat of Alexandria here were the finest in the show, and might fairly have been pointed at least three points higher, they were extra fine in bunch, grand in berry, and with one exception finely coloured. Of these there were four bunches. Madrasfield Court, two bunches, were extra weighty, grand in bunch and berry, but a little deficient in colour. Gros Maroc were noteworthy for the huge berries, large bunches, and high finish; Black Hamburghs left nothing to be desired, being fine in berry, bunch and colour; the remaining two bunches were of Alwinck Seedling, huge double bunches well finished. This was the finest exhibit of grapes in the Show, and it is tolerably safe to say that no two other exhibits, if combined could have beaten them. The 2nd prize was sent north of the border, and to Messrs D. & W. BUCHANAN, Kippin, Stirling, the bunches here were also of high-class finish, being possibly heavier on the scale than in the 1st prize lot; these comprised two grand bunches of Alicante, the largest of which was fairly worth the maximum given, and 1st companion nearly as much. Two smaller Alicante were also staged, but also of Cooper's Black, which, in spite of all that may be said to the contrary, is, in our opinion, so close to Gros Maroc as to deceive all but those who may be growing the two kinds. Four grand bunches of Black Hamburgh were also staged, better in bunch and finer in berry. The two remaining bunches were of Madrasfield Court, a little deficient in colour; and a finely finished example of Alwinck seedling. (What was wanting in the preceding exhibit was a couple of bunches of Muscat.) The 3rd prize was taken by Mr. Shingler, 3rd, to Lord HASTINGS, Melton Constable. The points allotted to this exhibit were 51, as compared with 83 to the 2nd prize exhibit. The 4th prize, with 75½ points, went to Mr. MELLISS.

In the last four classes, additional prizes are offered for the twenty dishes of fruit, the chief of these were awarded as follows.—1st to Mr. NEED in the class for twenty dishes of fruit, the chief features being lightness, the material used being long, trailing shoots of *Lycopodium casimii*, with the bronzy tints upon it; a few *Cypripedium* and *Carnation* blooms, lightly set up with *Gypsophila* moderately used. The 2nd to Mr. MELLISS in the class for twenty bunches of grapes; the material used here was *Eshala japonica variegata* plants, trailing shoots of *Asparagus plumosus* and *A. Sprengeri*, and as floral accompaniments, *Montbretia* and *Dracenas*. 3rd to Messrs. BUCHANAN in the same class with well coloured small plants of *Crotoms*, *Asparagus*, and Maidenhair Ferns, with cut foliage of variegated *Ivy* and *Ampelopsis Verticillata* being the chief features. 4th to Mr. McINDOE in the class for twenty dishes of fruit; the chief here as indicated by *Anthurium Scherzerianum*, *Kalanchoe flammula*, and *Hebeche sanguinea*, *Clerodendron fallax*, with *Panacium fragrans*, and a backing of pretty plants, made a bright display. 5th to Mr. JORDAN in the class for twelve dishes of fruit, who had pretty light plants of *Crotoms* and *Eulalias*, with *Crocus salina* beautiful, and a light touch of *Montbretia* and cut *Asparagus deflexus*.

For four bunches of Grapes, Mr. BANNERMAN was 1st, with excellent, well-finished examples of Muscat of Alexandria and Gros Maroc, Mr. Ball, ex to J. C. WATERHOUSE, Esq., Prestbury, Macclesfield, with two superb bunches of Madrasfield Court and two also of Muscat of Alexandria, not so good, was placed 2nd, and Mr. Lambert, ex to Lord HASTINGS, Broxton, Glasgow, 3rd.

For Black Hamburgh, three bunches, Mr. W. DAVES, ex to Lord TREVOR, Brynkinald, Cork, was a worthy 1st, with grand bunches of the finest colour and finish. 2nd to Mr. J. LANGLEY, with large bunches, scarcely inferior to the preceding.

For Muscat of Alexandria, three bunches, the 1st prize was awarded to Mr. W. NEED, Holmes Chapel, Cheshire, with heavy, compact bunches, fine in berry and finish; the 2nd to Mr. COATES, ex to Col. PLATT, Gooding, Lambeth, who had long tapering bunches.

Ten other classes were provided for Grapes, some for three, and others for two bunches.

The classes for separate kinds of fruit were also well filled. This was specially notable in those for Peaches, Seedlings, Melons, and Potatoes. Prizes also were quite up to the average, although it is yet quite early enough for the best dessert kinds.

MISCELLANEOUS EXHIBITS

were numerous, and it was extremely difficult to gather up a list of the awards actually made, but so far as can be learned, Gold Medals were awarded to Messrs. F. RIVERS & SONS, nurserymen, for orchid house trees, 4 in pots, *Pentstemon*, *Nepenthes*, *Platanus*, *Chelidonium*, and bunches of Grapes; to Messrs. B. R. DAVIS & SONS, Yeovil, for a very fine collection of Begonias in pots; to Messrs. DOBBIE & CO., nurserymen, Rothsay, for a superb collection of Pen-stemon, from their nurseries at Orpington; to Messrs. R. HARDY AND CO., Long Nurseries, Cork, for *Cladonia*, and other cut

flowers, a fine and varied collection; and to Mr. JOHN GREEN (Hobbs) Co., for a large and representative collection of Cactus Dahlias, including several promising novelties.

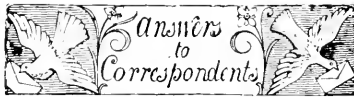
Small Gold Medals were awarded to Messrs. DICKSONS, LTD., Chester, for a collection of cut flowers of a varied and interesting character; to Mr. A. MYERS, Sutton Lane Nurseries, for floral decorations, with zonal Pelargoniums, &c.; to Messrs. JONES & SONS, Shrewsbury, for a collection of Sweet Peas and other flowers; to Messrs. J. PEED & SONS, Russell Park Nurseries, London, for a fine group of Calliandras in variety; to Mr. HENRY ECKFORD, Sweet Pea merchant, Wem, for a very fine collection of Sweet Peas, including some new varieties of promise; to Messrs. HUNTS BROS., nurserymen, Warwick, for a large and varied collection of Sweet Peas, and to Messrs. J. JALMAN & CO., seedsmen, Chard, for a bank of varied cut flowers, and a table of their specialities in vegetables.

Silver-gilt Medals were awarded to Messrs. J. H. WHITE & SONS, nurserymen, Worcester, for a collection of cut flowers; to Messrs. R. SMITH & CO., St John's Nurseries, Chester, for a large and interesting collection of plants and cut flowers; to Mr. S. MORTIMER, Swiss Nurseries, Farnham, for show, Fancy, and Cactus Dahlias in great variety; to Messrs. WEBB & SONS, seed merchants, Worsley, for cut flowers of various kinds, including a good strain of *Gloxinas*; to Mr. E. MURRELL, Portland Nursery, Shrewsbury, who had a varied collection; and to Mr. J. CHUNG, nurseryman, Pogy Hill, Enfield, who had a large group of Ferns.

Silver Medals were awarded to Mr. H. DICKSON, Bury, for a collection of cut flowers; to Messrs. T. GUNN & CO., nurserymen, Olton, for hardy flowers in variety; and to Mr. W. PATTERSON, Shrewsbury, for a collection of sprays and vases of *Vivida*.

Mr. J. HUDSON, The Gardens, Gunnersbury House, Acton, exhibited blooms of *Nymphaea gigantea*, *Anaryllis Belladonna major*, *Sagittaria japonica*, *Il. pl.*, and *Selambium spectabile*, Mr. S. COLE, The Gardens, Althorp, Northampton, had blooms of his new Sweet Pea Countess Spencer. A collection of stunted Japanese trees were shown by Messrs. M. PIERRE HARR & SONS, Shrewsbury.

Certificates of Merit were awarded to Cactus Dahlia Fire King, from Mr. S. MORTIMER, very bright in colour, and to Miss Grace Cook, a charming rose-pink variety from Mr. J. GREEN, Dereham.



BECH: Sandridge. It is not a fungus, but an insect allied to *Oecus*, and to the American-blight which affects the Apple. It is very injurious; petroleum emulsion may be tried, but we have little faith in your being able to apply it sufficiently to all parts of the tree.

BOOKS: *T. D. R.*, The standard book is *A Manual of Forestry*, by William Schlich, C.I.E., Ph.D., in four volumes, published by Bradbury, Agnew & Co., Ltd., 8, 9, 10, Bonville Street, London.

CYANIDE OF POTASSIUM: Wasps. You can obtain this from a chemist, and the best mode of applying it was described on p. 111, in our issue for August 10.

GOAT BARKING APPLE TREES: *H. B.* Mix a white-glassful of spirits of tar in 2 gallons of white-wash and clay and cow-dung, making the whole with water of the consistency of thick paint; and with this coat the stems to a height of 5 feet.

GRAPES, &c.: *G. C.* Your berries are suffering from "shanking." This arises from a variety of causes, all the result of faulty management. The Tomato is imperfectly ripened. The hard patches are due to excess, and consequent granulation of one of the constituents caused by lack of potash in the soil. Use sulphate of potash to remedy the evil, and do not kainit. There is no fungus. The names of the Ferns will be given next week.

IVY-LEAVES: *Index.* The leaves are swarming with an *Acarus*, the so-called red-spider. Syringe the leaves with 1 oz. of kerosene-oil to a gallon of soap-suds, keeping the mixture well stirred. Burn the affected leaves as far as you can.

LIVE CATERPILLAR: *J. M.* The caterpillar of the Death-head Moth. It generally feeds on Potato banha.

MELON-LEAVES: *Dyswell.* There is nothing wrong with the leaves. Examination of

roots and stems are necessary, to enable a statement as to the cause with certainty. *G. M.*

NAMES OF FRUITS: *G. W.* Your Apple is the true type of Keswick Collin. We have gathered fruits of this variety as early as the middle of July in a similar district to that you name. In some places it can be gathered still earlier.—*A. B.* The fruits were damaged in transit, and all except two were too smashed to be recognisable; these are, 1, Nectarine Hardwicke; 4, Apricot, Large Early.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*T. N.* *Burlingtonia pubescens*.—*X. no name*, 1, *Selaginella denticulata*; 2, *S. Mertensii*; 3, *S. Viticlosa*; 4, *Adiantum trapeziforme*; 5, *A. Paotii*; 6, *A. capillus-veneris*; 7, *A. decurram*; 8, *Pteris hastata*; 9, *Lastrea filix-mas*; 10, *Nephrodium molle*; 11, *Athyrium filix-femina*. The ordinary garden names are given. Most of the Ferns were immature barren fronds, or portions of fronds, very difficult to determine. Where possible, mature, fertile, and barren fronds of each should be sent.—*R. R.* 1, *Pteris Wimsettii*; 2, *Pteris cretica albolineata*; 3, *Pteris cretica Mayii*; 4, *Adiantum pubescens*; 5, *Adiantum hispidulum*; 6, *Pteris serrulata cristata*. The *Odontoglossum* × *Ruckeriana* is a remarkably handsome and finely-coloured fern.—*A. W.* *Phillyrea decora*, *Quercus cerris*.—*Saegroya*, *Tecoma radicans*.—*W. E. D.* *Hibiscus* *Griacum*, commonly called *Althea frutescens*.—*G. R. C.* *Eucromocarpus scabra*.—*G. R.* 1, *Inula Helenium*; 2, *Atronia belladonna*; 3, *Saponaria officinalis*; 4, *Pyrethrum uliginosum*; 5, *Lupinus*; 6, *Sclera telephium* var.—*Auroras*. 1, *Podaocarpus*; 2, *Veronica Traversii*; 3, *Veronica spicata*; 4, *Antennaria margaritifera*; 5, *Tanacetum vulgare*, if the flowers are yellow; 7, *Bocconia cordata*.—*Kyle*. 1, *Silphium laciniatum*; 2, *Helianthus rigidus*; 3, *Impatiens Roylei*; 4, *Spiraea Douglasii*; 5, *Sedum telephium* variety; 6, *Eucryphia pinnatifolia*.—*G. Austin*. *Koeleria paniculata*, *Label nasturtium*; scarlet flower, *Zauschneria californica*.

PEACHES: *J. B. W.* Your fruits are affected with a fungus, the ordinary Peach mildew. Dusting with sulphur is the best plan to follow, but it is too late now. Burn the fruits.

PONY ON LAWN: *W. H. Y.* A simple remedy would be to immediately throw over the grass affected a bucketful of water, thus diluting the ammonia contained in the urine.

SHRUB: *W. Sharpe*. Can you give particulars of the shrub sent? We cannot trace it.

VINES: *Vine*. The trouble is at the roots of the Vines, which are suffocated for want of air, the soil being too compact and water-logged. When these defects are remedied, the foliage and roots will develop vigorously. *G. M.*

VIOLETS: *Dongdale*. The injury is caused by a fungus—*Phyllostictia violae*. The leaves should be sprayed with an ammoniacal solution of carbonate of copper. This acts best when done early in the season. Diseased leaves should be collected and burned, otherwise spraying next spring will be almost useless. *G. M.*

COMMUNICATIONS RECEIVED.—*W. B. J.*, many thanks, but it is too late for the present season.—*A. J. L.*, the writing was insufficiently legible.—*S. A. E.*—*E. C. O.B.*, Secretary Derbyshire Agric. and Hort. Soc.—*T. S. Ware*, Ltd.—*G. Smith*—*G. W.*—*Dr. B.*—*H. T. M.*—*J. Snel-H. G. C.*, Secretary Glasgow and West of Scotland Hort. Soc. (with thanks)—*J. W. M.*—*G. H. R.*—*J. C. E.*—*B. C. W.*—*R. F.*—*J. M.*—*S. A.*—*A. P.*—*D. R.*—*W. E. M.*—*R. L. C.*—*T. J. D.*—*O. B. R.*—*W. K. E.*—*F. T. M.*—*N. A. D.*—*J. H. E.*—*W. R. L.*—*T. Russell*—*W. J. G.*—*Oakfield*—*H. Edwards* (thanks).



A. SMITH
PHOTO

GARDENERS'
CHRONICLE

GROUP OF STANDARD WISTARIA, GROWN BY MESSRS. J. VEITCH AND SONS

ORCHID NOTES AND GLEANINGS.

SELENIPEDIUM GRANDE.

A VERY remarkable flower of this hybrid, between *S. caudatum* and *S. longifolium*, kindly sent by Messrs. Charlesworth & Co., Beaton, Bradford, Yorks, shows abnormal characteristics. The upper and lower sepals are united into one blade with a concave base. At right angles is a narrow purple-tinted petal of the normal form, and about 5 inches in

plants of the orange-scarlet *D. sublaevisum*, imported by Messrs. Jas. Veitch & Sons, has been identified with the above-named species at the Kew Herbarium. The plant is of slender growth, and bears short racemes of rose-purple flowers, three or four on an inflorescence, and in colour and appearance to a casual observer rather like *D. glomeratum*. The structure, however, is very peculiar, and totally different from that species. The sepals and petals are short and not conspicuously displayed, but the lower sepals are continued into a thick spur.

The Royal Infirmary, Liverpool, who remarks:— "It grows with me in an ordinary greenhouse, better than in the warmer Dendrobium-house, and produces slender pseudo-bulbs about 2 feet in length, bearing racemes of several flowers at the extremities. The roots seem to be pubescent or rough, and adhere closely to the wood of the basket." The flowers are white tinged with rose, and with a yellow crest to the labellum. These remarks may be useful, as the plant is often found in a declining and unsatisfactory state in warm houses. It is by

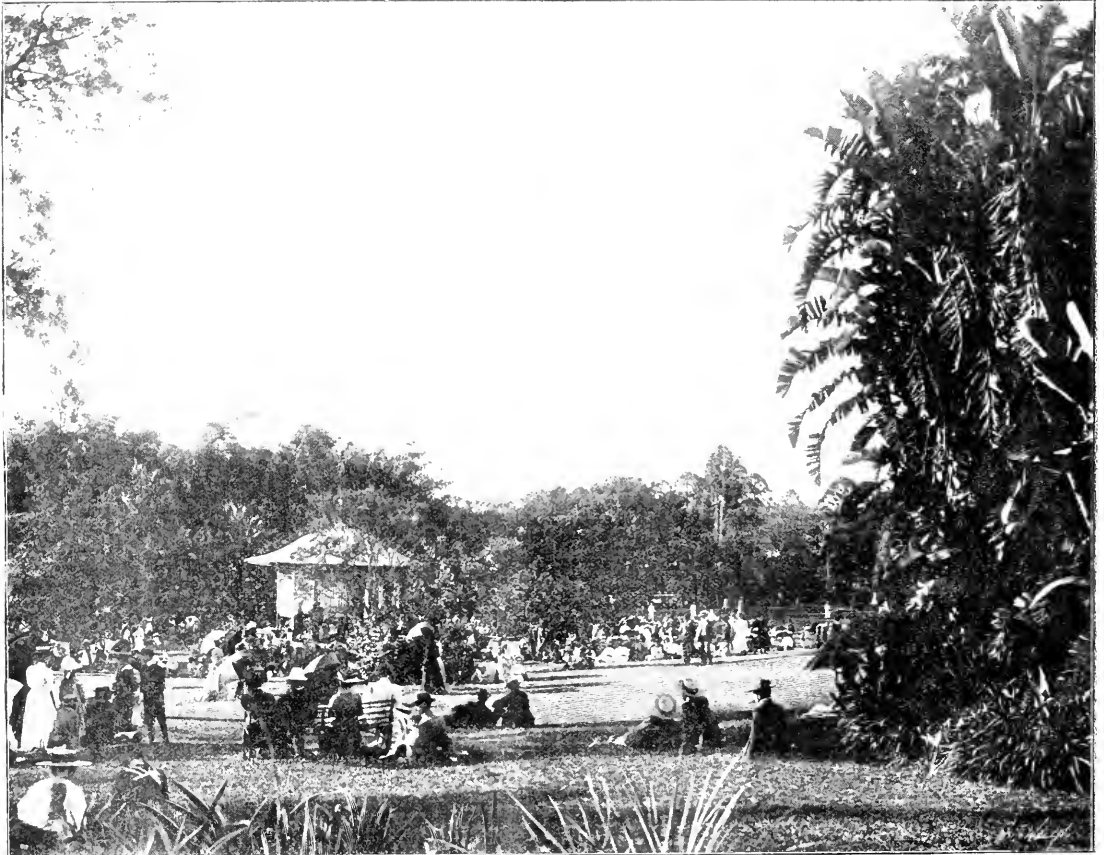


FIG. 51.—VIEW IN THE BOTANIC GARDEN, BRISBANE. (SEE P. 161.)

length. The labellum, instead of forming a pouch, is formed into a large tolerably flat blade, round the wavy margin of which the other purplish petal is attached like a riband frill, looking very singular surrounding the whitish, rose-freckled blade. The column juts out straight from the ovary, with the stigmatic plate at the apex, the anthers appearing on short filaments beside it.

DENDROBIUM CORNUUM.

A very pretty and extremely rare Dendrobium appears in the collection of Major Joicey at Sunningdale Park, and which Mr. Fred, J. Thorne, his gardener, states was received with

which closely follows the under side of the flower-stalk and ovary, so that they appear to be almost united; and both ovary and spur being of the same bright rose-purple colour, they form a very showy and striking feature. The short labellum is also peculiar in shape, the front forming a pouch with up-turned apex, above which the column appears. It lasts a long time in perfection, and the rose-purple flowers being darkest over the veining, variety in the colouring is given.

DENDROBIUM MUTABLE (HIBADENDUM).

Flowers of this pretty though not large Dendrobium are sent by Francis H. Moore, Esq.,

no means a common plant, although it has been imported frequently, and probably the practice of growing it in too high a temperature may account for its scarcity.

NATURE-STUDY.*

(Continued from p. 150.)

"The natural interest in a living thing (be it an animal or a plant) which is possessed by almost every child, should be taken advantage of. Companionship with plants and animals means a great deal. There is something real
* Address by Mr. P. Holsworth Parfitt, B.Sc., F.F.S., at the Harper Adams Agricultural College, August 1.

and genuine about it—something suggestive. Very much could be done by teachers in encouraging the pupils to grow for him or herself, be it only a single plant. It does not matter much what the plant is, only let it be grown from the beginning. A grain of Wheat or Barley, a Pea or any weed even, will serve for a beginning. Something that grows and matures quickly is perhaps more interesting and attractive. The next step may be the growing of something which is useful—a

there will be something new to speak of, and to demonstrate. The comparison of common well-known plants in their early stages will be most useful and interesting.

"Another direction in which very useful work may be done, among mere especially the older pupils, is in teaching the elements of 'germ' life; to call it bacteriology would be misleading, and perhaps bring down the undesired criticism of scientists.

"There is, however, a good deal of the

individual realised what the danger of the practice of spitting in public meant. But before perhaps such an ideal state of affairs could be reached, the humblest individual must be taught wherein the danger lies. With milk as the object, much useful teaching can be done in showing how the organisms in the first place are present in the air, and on entering the milk bring about a change in its composition and cause the milk to turn sour. Further, it could be shown that at times such a state of



FIG. 52. VIEW IN THE ROYAL GARDENS, BRISBANE, (AUSTR.) (P. 141.)

Radish, Pot-herb or Strawberry. Single plants will serve the purpose. I do not suggest this for teaching gardening, but simply and solely to encourage among the youngest pupils a pleasurable interest in a living, growing thing.

"Pot-cultivations are of great use, and serve as objects for a number of lessons. Take for example a grain of Wheat, a Pea, or Bean, &c., may be induced to germinate on a damp cloth. The conditions that are necessary for germination, moisture, air, warmth, can very easily be demonstrated. Next will come the root and stem, and seed leaves, and soon. Day by day, during the life of the plant

science of organic life, which can be taught to pupils in elementary schools. Micro organisms play such a part in our daily life that it is most essential for everyone to know something of the rudiments of the laws which govern these minute forms of life. During the recent Tuberculosis Congress in London, a great deal was said about the spread of this deadly disease, and much stress has been laid upon the question of prevention of spitting as a precautionary measure against the spread of the disease. In New York city it is a misdemeanour to spit in a public place, and the punishment may be as much as one year's imprisonment or a fine of 500 dollars. Such a law would not be required if the

affairs can be made use of, and is even necessary. From milk other branches may be touched upon which, while perfectly simple, and above all free from technicalities, will be helpful to the pupil in understanding those subjects to be met with in every-day life.

"The one danger that perhaps we should be on guard against, above all others, is that of making Nature study a dry lifeless lesson. Vitality of interest is the secret of success.

"Finally, let me say, cultivate enthusiasm in yourselves, and from yourselves it will spread to your pupils. Let spontaneity be a ruling feature, and with a devotion that inspires an abiding faith in boundless possibilities your work will be crowned with success."

LILIES AND THEIR CULTURE.

(Continued from p. 147.)

LILIUM HUMBERTI AND L. WASHINGTONIANUM.—These two Lilies, with their garden varieties and *L. columbianum*, comprise a group which falls mid-way between border Lilies and the Marsh Lilies of Western America. They produce a few serviceable stem-roots, but depend mainly upon their basal roots for support. They all require a well-drained soil, not necessarily peaty, so long as it is fairly open, and copious supplies of water when growing. The rainfall of Great Britain is scarcely enough for them, and they must therefore be watered by hand. The bulbs are of loose build, and are easily fractured; they all grow in an oblique direction, yet are not capsitose, or strictly rhizomatous, as in *L. parvum* and *L. pardalinum*; those of *L. Humboldtii* are a dull pink or red, whilst those of *L. Washingtonianum* are white in colour; their leaves are whorled, as in the Martagon group.

L. Humboldtii grows to a height of 5 feet, and bears twenty or more large orange-red flowers, reflexed and pendulous, each 3 to 4 inches across, and spotted on the inside with large purple spots (see fig. 37, p. 144, Jan. 31, 1874).

The var. *Bloomeriana* differs from the type in its paler flowers, and in having a purplish shading throughout, densest near the tips.

L. columbianum may be described as a very small *Humboldtii*; it has small, whorled leaves, more or less bronzed, and two or three flowers, about an inch across, coloured bright orange, and spotted throughout with black and purple. The petals are much reflexed, forming a complete roll; its ovary is also spotted. It likes a light, open soil, and plenty of water, which must pass away quickly, or the plants soon discolour and ultimately wither.

L. Washingtonianum, a grand trumpet Lily, 4 or 5 feet high, bears fifteen to twenty flowers, each 3 inches across, white in colour, tinted purple on the inside, where also a few spots occur on the margins. Its leaves are whorled, broadest and longest below. It is a very graceful Lily, of tolerably easy cultivation, succeeding with *Humboldtii* (see fig. 29, p. 59, July 20, 1901).

Its var. *purpurea* is a slender-growing plant, 18 inches high, the leaves of which are curved and undulating. Two or three flowers are produced by each plant, they are large in proportion to the size of the plant, are white in colour, 3 inches long, and are minutely spotted pale purple or lilac about the middle. A delicate flush of lilac suffuses the whole flower a few days after opening.

A still smaller var., *rubescens*, has much reflexed flowers, in shape like *Lilium columbianum*, coloured white when it first opens, shading to a rosy-lilac on the second or third day. The flower is also heavily spotted a similar colour. The scent of these Washington Lilies is very sweet and refreshing, resembling that of a *Hymenocallis*. The flowers are very delicately tinted, and possess a grace peculiarly their own. All these Lilies are very liable to "sunstroke," and it is best to plant them where they may be shaded, but in such a position that the drip of trees cannot reach them.

LILIUM GIGANTEUM AND L. CORDIFOLIUM.

These two Lilies are woodland plants, delighting in rather dense shade, a damp, not dark, situation, and a root-run of dead leaves and vegetable debris; they cannot be cultivated with any measure of success in the open border. *L. giganteum*, the biggest known Lily, is a grand plant when well grown. Large bulbs, though so frequently planted, are practically useless, for they push their flower-

spikes before the plants have had time to establish themselves, and the inflorescence rarely develops properly. Small three or four-year-old bulbs, about the size of a small cocoa-nut, are more satisfactory, for they have a few years in which to establish themselves before the flower-spikes ascend. It is, however, only those plants that have originated as offsets from previous bulbs, and which have grown away undisturbed, that produce the finest spikes. The stem averages 8 feet in height, and bears upwards of a dozen greenish-white, fragrant flowers, each a foot across, and tinted purple on the inside. The flowering-stem not only exhausts the bulb and reduces it to a moist mass of pulp and fibre; it also emits a large number of extremely thick roots from its base, which pierce the tough scales of the bulb in all directions, feeding on the decaying tissues as it passes through to the outside soil. The destruction of the bulb is so complete that only a mass of tough fibre and a few offsets are left on the old basal disc. These offsets quickly get away into growth, and in order that these may not be disturbed whilst they have no roots, the stems should be cut down, not uprooted. An annual top-dressing of rich soil and leaves, and copious waterings in dry weather, should be given to every colony of these plants, or they will wear out in the course of time. Imported bulbs or large bulbs newly planted that have attempted to flower soon after planting should not be uprooted as failures, but allowed to grow as much as they will; the offsets they always produce will, if left undisturbed, prove far more successful than their parents, it is merely a case of hope deferred. A clump of this fine Lily in flower is a grand sight, and worth every effort that can be made to obtain it.

Lilium cordifolium is a rarer plant than *L. giganteum*. It has a stem about 3 feet high, and bears six long, erect-growing, tubular, white flowers, spotted purple on the inside, and drooping, heart-shaped leaves, which are whorled in the lower portion of the stem. For garden purposes it may be described as a small *giganteum*, with erect, more tubular flowers, and drooping leaves. Where *L. giganteum* grows, this plant is likely to succeed, but it is rather difficult to keep it thriving (see *Gard. Chron.*, July 20, 1901, p. 51). *Geo. B. Mallett*.

(To be continued.)

ROSE - STOCKS AND BUDDING.

As the budding season is still with us, I wish to make a few remarks which may be followed to advantage by amateur gardeners or others. I am dealing now with the Standard Briar-stock. The hot weather of late has not been very favourable for the Briar pushing out shoots unless the surface of the ground had been heavily mulched during winter and spring, which, maintaining the moisture near the roots, would prevent evaporation; even now, or immediately after budding, a good mulching of manure would be beneficial to the plants, and as a consequence to the buds. Briar-stocks sometimes break irregularly, but the three strongest and best placed shoots should be selected, and as near the top of the stock as possible, which, when budded, are usually sufficient to form a good head for the ensuing season. [Many gardeners are satisfied with one bud. *Et c.*] In case of a miss, two extra shoots can be left as a reserve to work in August, but if not required, they can be removed. The shoots, when ready for budding, should be about the thickness of a lead-pencil, and mature. I prefer making a parallel cut, and slipping the scion in the opened bark

without the right angled T or cross-cut, as a much better union is effected, and the shoot is not so liable to be broken off by the wind, or from other causes, only it requires an expert hand to do it. It is best to choose scions with good prominent buds. It is often a vexed question whether the wood from the scion should be removed in all cases or not. If the woody part does not leave the bark freely, the better plan is to leave it in, but if it comes away easily, well and good. In new or choice varieties, where it is desirable to use all the available wood, the former plan can be used to the best advantage.

There is sometimes a difficulty in finding early scions sufficiently developed when the stocks are ready; this I have met by taking well-ripened wood from plants gently forced under glass. Tying in the bud is an important matter, which should be done neatly in the form of a bandage, finishing off with the two ends at the top, and well covering the incision. The best material I have found is cotton waste; this has an advantage over raffia in being more elastic, and not so liable to cut into the rind when the bud begins to swell. I have known cases where, through neglect to sever the ligature, the bud has been ruined by raffia. The ends of the shoots should be kept in a can of water or damp moss, while the budding is proceeding. At first some stocks will not run. I usually shorten these back a few inches, and leave them for the last working, or what is generally called "filling up," as by that time they will have pushed a few lateral shoots, which, bringing up the sap, causes them to run right enough. Under favourable conditions the ligatures can be removed three weeks from the time of budding, but this will depend on the character of the weather, which might cause it to be a week or so later. *J. D. Golewin*, 29, Cleveland Road, Southsea.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables, ante, pp. 88-94.)

(Continued from p. 149.)

8. ENGLAND, S. W.

CORNWALL.—I have not seen Peach-trees looking so badly for a number of years. The cold winds that we had in the months of March, April, and May blistered the leaves very much, and killed in some cases last year's growth. Small fruits are very good, especially Strawberries. *W. H. Bennett, Membilly, Par.*

— Early and maincrop Strawberries were gigantic in size and of very good flavour. There are next to no Apples, although in a few places I hear of very good crops. Small fruits are abundant, Raspberries especially so. Filberts are a complete failure. Medlars bear an average crop, and Figs are very fine. *A. C. Bartlett, Penarrow Gardens.*

DEVONSHIRE.—Dry east winds, occasional sharp frosts, and a low temperature by night at the time of blossoming, had a bad effect on wall fruits, causing the trees to set badly. A great improvement in the weather came in time to save Apples and Pears. Caterpillars were more abundant than usual on Gooseberries and Currants. *Andrew Hope, Prospect Park, Exeter.*

— Apples are much below the average, and small in size. Pears are a partial crop. Peaches and Nectarines are very good, but the trees were blistered early in the season. Small fruits are very plentiful, but small. *Geo. Baker, Membilly Gardens, Plymouth.*

— The Apple crop will again be good. Plums against walls are a heavy crop, and I do not remember seeing the trees so free from

red-spider. Apricots and Peaches are looking well. Pears, as a rule, do not carry very heavy crops, except Williams' Bon Chrétien, which is laden. Small fruits have been abundant and good. *James Mayne, Birtou, East Budleigh.*

DEVONSHIRE.—The fruit crop in this neighbourhood is generally good, but Apples are not so plentiful as last year. Walnuts and Colnuts, Peaches and Nectarines, are excellent. *C. W. Bloye, The Gardens, Pinhoe, Lyme Regis.*

— The Apple crop in these gardens is the lightest for some years, although there was abundance of bloom. Pears in the open are a very light crop. Peaches and Nectarines gave promise when in flower of very heavy crops, and appeared to set well, but the north and north-east winds caused the fruits to drop; while for some years past I have not seen the trees so badly affected by leaf-blisters. Plums are a heavy crop again this season, especially Kirke's. *T. H. Slade, Pottimore Gardens, Exeter.*

GLOUCESTERSHIRE.—During the thirteen years that I have lived in this locality, I never remember seeing the fruit crops so good, although reports reach me from the Pershore and Evesham district that the crop there is somewhat partial. *Geo. W. Marsh, St. George's Nursery, Cheltenham.*

— The Apple and Pear crops vary very much this season; the best Apples are Blenheim Orange, Bramley's Seedling, Flanders Pippin, Ecklinville, White French, Warner's King, Pott's Seedling, Worcester Pearmain, King of the Pippins, Duchess of Gloster, and Early Margaret. The best Pears are Beurré d'Amanlis, Beurré Diel, Duchesse d'Angoulême, Chaumontel, Huxley's Prince of Wales, Uvedale St. Germain, Catillac, &c. *Alfred James, Woolstone Rectory Gardens, Cheltenham.*

HEREFORDSHIRE.—The fruit crops generally are looking well, and the trees are clean and healthy. Plums are a full crop, both on walls and bush trees. Strawberries were the best we have had for years. *Thos. Spencer, Goodrich Court Gardens, Ross.*

— The Apple crops are good, and look promising. The great pest, the Pear-midge, has reduced the Pear crop to very small proportions, and has done so for the last few years. *John Watkins, Pomona Farm, Withington, Hereford.*

MONMOUTHSHIRE.—Apples will be below the average in this district, and not at all clean. Some varieties have again proved their superiority. Calville, Blanche d'Hiver, Merc de Ménage, Hawthornden, and Golden Pippin, in particular, are carrying immense crops; while young pyramid trees of Cox's Orange Pippin have a few nice fruits on them. Pears are an average crop, Madame Treve, Marie Louise, Doyenné du Commerce, Durondeau, and Louise Bonne of Jersey being the best. Peaches and Nectarines set well, and required much thinning. Gooseberries and Currants are most abundant. Strawberries have been plentiful, and of good flavour. *W. F. Woods, Blansfords Grange Gardens, Cardleon.*

— Apples and Pears collectively are a good crop, and promise to be of good quality. Insect pests have not been very troublesome, where the customary winter and summer sprayings have been carried out. Cherries are excellent in quality, and abundant; while Peaches and Apricots are good in every respect. Plums, although they blossomed freely, are not so plentiful as last year, after the heavy crops of the past two years. Strawberries were plentiful and good, as are also all bush fruits. *Thos. Coomber, The Hendre Gardens, Monmouth.*

SOMERSETSHIRE.—Small fruits have been abundant, and of capital quality. Apples are under average, but of very good size. Some Apple and Pear Orchards have plenty, and in another one near by there are no fruits at all. *Thos. Wilkins, The Gardens, Linwood House, Henstridge.*

— Poor as are the crops of Apples, Pears, and Plums, they are better than I expected after last year's exhaustive crops. The fruits are clean and good, and the trees are very clean. Cox's Orange, Ribston Pippin, Scarlet Pearmain, Domino, and Lane's Prince Albert, are our best Apples. *John Crook, Forde Abbey Gardens, Chard.*

WORCESTERSHIRE.—Excepting Apples on orchard standards, which were heavily cropped last year, the fruit crop is remarkably good, and of excellent quality. Apples on

periods of drought without serious check, whilst those crops growing on shallow land and hard, unbroken subsoil have quite failed. Insect attacks have been numerous and persistent. It is only by a policy of "war to the knife" with proper insecticides that their attacks have been repelled. The Strawberry season was short, but exceptionally high flavour was secured. Apples are clean, and a fairly good crop. Apricots also have been very good in quality and size. *W. Crump, Mulresfield Court Gardens, Malvern.*

(To be continued.)

HERBACEOUS BORDER.

LATHYRUS MAGELLANICUS.

A YEARAGO I sent to the *Gardeners' Chronicle* a note concerning the history of this rather famous blue everlasting Pea. The name was adopted by me on the authority of Don in Sweet's *British Flower Garden*, Series II., tab. 241; and is that by which Lord Anson's Pea is generally known amongst amateurs. But it appears that this Pea, which was first described in Miller's *Dictionnaire* as *Pisum americanum*, was called in Lamarek's *Dictionnaire* *Lathyrus nervosus*; and another Pea, with dull, magenta-coloured flowers, was named *L. magellanicus*. In *Index Kewensis*, the priority is rightly given to the name *L. nervosus* (Lamarek), and this is the name by which Lord Anson's Pea is known at Kew. Mr. Bailey tells me that he has the true *L. magellanicus* (Lamarek), and that it has just been verified for him at Kew. As for Lord Anson's Pea, which I rightly described last year as a disappointing flower, I have, by the help of seeds and cuttings, managed to keep it alive; and one plant flowered rather freely last June, having lived on a south wall through winter without dying down; but the colour is rather dull blue, and by no means like the colouring of Sweet's portrait, though the plant agrees with it in all other characters. *C. Wolley Dod, Edge Hall, Malpas, August 22.*

FOREIGN CORRESPONDENCE.

PERENNIAL ASTERS.

THE Asters unquestionably form one of the finest groups of native American plants. The number of species is unusually large, they present a great variety of colour and habit, and they are nearly all hardy and useful in cultivation. Most of them take to the garden very kindly. They thrive and spread in the hardy border, and grow large and lusty under the gardener's care. Some of them are at home in the shade, while others prefer the sun. Some will endure severe drought, though others do best in a rather moist situation.

It cannot fairly be said that the native Asters have become thoroughly popular in American gardens. The common gardener's mind turns always to something exotic. And then we have not yet learned in this country the lesson of how to grow hardy plants in a border. Occasionally you may see a good one, showing that our climate and conditions are not unsuitable to it; but for the most part we have not passed the flower-bed stage of gardening yet. We are making progress, though. The most popular, and probably the best, of all is the New England Aster, *A. Nova-Engliæ*. This has large, showy, blue flowers, which are borne in large trusses on a very stately plant. The plant, when well cultivated, reaches a height of 1 foot, or even more. The flowers appear late in the summer, or in early fall, about September 1 in this



PHILIP MACMAHON,
(Director of the Royal Botanic Gardens,
Liverpool.)

garden bushes and pyramids set very heavy crops, and have been thinned severely. As garden trees are more under the control of the cultivator, the crop can be thinned, and a crop obtained again the succeeding season. Pears are excellent in quality. All fruit-trees are healthy, and free from insect pests. *A. Young, Willey Court Gardens, Stourport.*

— There was a grand show of bloom on all kinds of fruit-trees in this district, and there are good crops of fruit. Strawberries were very fine, Royal Sovereign, Leader, and Waterloo being our best varieties. All bush fruits have been heavily cropped, and the fruits are of good quality. The Apple-maggot is very destructive, and American-blight seems worse than ever this year. *F. Jordan, Inipney Gardens, Droitwich.*

— This has been a remarkable season of extremes in temperature and moisture, varying from periods of cold and wet to intense heat and aridity. This has affected the fruit-crops in various degrees, according to local conditions. The immense advantages of deep and thoroughly good cultivation with a free, open subsoil have been remarkable this season. It has enabled the crops to withstand

latitude, and last for a considerable time. There is a beautiful variety of this species, the rose-flowering sort, which should be given almost equal praise with the "True Blue." This is really the only one of the native Asters which is well-known, and which may be had from all nurserymen.

Aster hevis seems to me to be the next best species in cultivation. This species is common along old fences and in woodland borders, but is not well known in gardens. It responds well to cultivation, however, and is a fine, stately plant, somewhat smoother of foliage and tidier of habit than most of its congeners. It has sky-blue flowers, borne in great abundance.

Aster cordifolius is a beautiful plant along woodland borders, where it often grows in large masses. It must be seen in fairly large masses to give the best effect. Though the plant is graceful, with a large and well-set inflorescence, the individual flowers are so small that they do not make much show till they are properly aggregated. They are white or pale blue.

Other good species are *Aster patens*, *A. spectabilis*, *A. ericoides*, *A. multiflorus*, *A. diffusus*, *A. paniculatus*, *A. Novi-Boelgii*, and *A. panicus*. There are several besides these which are well worthy of cultivation; and I can think of no genus of common plants which one might make a collection of with greater satisfaction. There are a few nurserymen who are beginning to see the value of them, and to list them in their catalogues. I feel confident that the demand for them will increase as gardeners learn their value, and doubtless most of the common species will come into cultivation one after another. *F. A. Waugh.*

FUNGI ATTACKING CUCUMBER ROOTS.

It was with the greatest interest I read your article on the supposed origin of Potato-tubers. There have been several good articles in the *Gardeners' Chronicle* about fungi, and they have helped me to find out the origin of a plant disease that before was hidden in the greatest darkness for me.

Here I have a great house containing Cucumbers. They are nursed in the same manner that is customary in English gardens. For several years they have behaved to my satisfaction, but this year they have nearly failed. The roots of the Cucumbers have swollen considerably, and consequently have given a small amount of fruit. For a long time I was not able to decide the origin of the disease. The plants have been given the best management possible, and have been nursed as other years. In one point only is there a change. This season I have used Bamboo sticks across the trellises as support for the young plants. They are what the Germans call "Tonkin-stäbe," and are directly imported from Tonkin. After having read the above-named article, I am apt to think that the Bamboos must have been infested with spores of a fungi, closely related to the smut of Oats, and this is the cause of the swollen succulent stems of *Zizania latifolia*. Having considered the facts, I am convinced that the swellings of my Cucumbers roots may be traced to this origin. Moreover, two months after planting, the sticks were covered all over with a black, sooty powder—mature spores, as I think. Apparently this powder has fallen to the ground and attacked the roots, causing the swellings. These are not large; some are as great as a common Pea, the biggest are as Walnuts. They resemble in colour and structure a Turnip, though not so irregular in shape.

I think it is singular, and proves that plant-roots respond to the irritation of a fungus. *Sweden.* [Are not our correspondent's Cucumber-roots attacked by col-worms? Ed.]

The Week's Work.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Pollimore, Pollimore Park, Exeter.

Lilium cavatum.—This chaste Lily is useful for a variety of purposes, whether planted in the mixed flower borders or among Azaleas, and has a good effect as large clumps. In order to extend the flowering season, bulbs should be planted in different aspects, and always in sheltered spots where the wind will not damage the blooms. The bulbs should be obtained forthwith, and planted without delay. Any clumps existing in the garden may, if strong, be taken up before growth recommences, and replanted. The re-planting may be done at a later date, but progress is then almost at a standstill for a year. The species thrives in almost any kind of garden soil, but the best results are obtained in loamy soils. Manure should not be applied when planting, but a mulch of half-rotted manure will be beneficial afterwards, and some of this may then be forked into the soil so that the roots may find it as they extend.

Lilium tigrinum.—Plants of this species are now in bloom, and, like the preceding one, they are excellent for sunny positions. A light or sandy soil is best suited to their needs, and in it fine large flower-spikes are formed. There are many other species of Lilies, some requiring special attention in regard to soil and treatment, that are well worth growing where their requirements can be met. Among them is *Lilium giganteum*, established bulbs of which carry a large, massive spike, but it is not a free bloomer. A sheltered position, a well-drained and fairly rich soil, appear to suit this species.

Dutch Bulbs.—Catalogues have begun to arrive, and the list of the quantities required will demand attention, for nothing is gained by delay in posting the bulb order. Where bulbs will be planted in the open ground, wherever this is possible, should be got in readiness, but where spring and summer bedding is the rule, the bulbs cannot be planted for some time yet.

Annual Asters.—These flowers are very fine this season, the showery weather during the past two or three weeks having greatly aided the plants. The gardener is amply repaid in fine blooms for a liberal treatment of the plants, whether in the mixed border or in beds by themselves. Asters have not been so good with us for several years as is the case this year. The plants were pricked out into their permanent quarters when of quite small size, and therefore they received very little check. The Comet strain is an exceedingly useful one, few plants lifting better when in bud, or their flowers just expanding. The new variety named "Ostrich Plume," or "Feather," is a decided acquisition amongst white Asters, the blooms measuring over 6 inches across, resembling a white Chrysanthemum, while a strong point in their favour is the length of stem the blooms possess.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEYERS, Esq., Cambridge Lodge, Flordon Road, Cambridge.

Orchids of the Coolhouse.—During the next few weeks, particular attention must be paid to the plants in this house. There exists amongst cultivators, differences of opinion in regard to the most suitable season in which to re-pot the plants. I may say, that I find the autumn months the most suitable, as then the plants become established without the drawbacks entailed by potting in the spring. The more robust growing *Masdevallias*, such as *Ignea*, *Veitchi*, *Harryana*, &c., should be re-potted at the present season, and that without delay. It is not necessary that these species of *Masdevallia* should be re-potted annually, but rather that consideration be given to the size of the pots used, and such sizes afforded as will hold the required quantity of compost, and afford

root space for a longer term than one year. This is the more desirable when dealing with specimens of large size. *Masdevallias*, for a great portion of the year, require a considerable quantity of water, therefore the drainage materials must be ample. In dealing with large specimens, an inverted pot should be placed at the bottom of the pot or pan, and the remaining space filled to the desired depth with clean crocks. I have tried bracken roots after thoroughly drying them; but care must be taken to use none in which any sap remains, or it will quickly turn sour, and probably breed fungus. The plants have succeeded well here with this material, but I cannot see any marked difference in the case of those plants as compared with others that have been afforded the ordinary materials; and the same has also been found to be the case with *Odontoglossums*. If bracken roots are made use of, potting must be very lightly done; and the compost should contain a larger quantity of sphagnum-moss. Affording water is a critical operation, for if too much be applied the tips of the leaves soon decay. The most suitable compost is one of chopped sphagnum-moss two parts, and one of turfy peat, together with a liberal use of clean coarse sand or finely broken crocks. Having turned out the plants, remove all dead matter about the bottom, which will improve their appearance, and do away with the risk of moisture accumulating about the base at undesirable seasons, i.e., during the winter months.

Odontoglossums.—The cultivation of *Odontoglossums* has engaged the attention of growers during recent years to a greater extent than formerly, and much progress has taken place in the management of *O. crispum*. A few years ago, we were largely dependent on Continental cultivators to supply the demand for the cut flowers; but now we have growers for market who make a speciality of *Odontoglossums*, and who have supplied the foreign grower. The *Odontoglossums* are at the present day better liked and more valued than ever. This success must be attributed to a better knowledge of the requirements of the plants, especially in the matter of ventilation, the dispensing with the use of crocks and the use of chopped-up bracken-roots, and to more careful methods of affording water. Any re-potting or top-dressing that may be deemed necessary should now receive attention, affording a compost of sphagnum-moss two parts to one of peat, and pressing it tightly about the base of the plants. Repotted plants should be thoroughly watered as soon as re-potted, carefully shaded from the direct rays of the sun, and the house kept slightly closer for a few weeks.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Gathering fruit.—Early varieties of Pears should be inspected, and the more forward fruits gathered and stored in the fruit-room. Of these, it may be mentioned that Jargonelle keeps but two or three days after being gathered, and is often found to be "sleepy" at the core, whilst ordinarily it is still sound. The best all-round early Pear is Williams' Bon Chretien, which, by having trees of it on walls having south, east, and west aspects, and also in standard form, may have its season considerably lengthened. By gathering the largest forward specimens, the remainder attain a larger size than would be the case if all were left and gathered together. Fruits from bush-trees and standards have usually the best flavour. The ground being now very dry, a heavy application of water will have a very beneficial effect on Pear-trees in general, in developing the fruits. Some of our Congress succeedees Williams' Bon Chretien, and grows to a larger size than that variety. The variety is excellent on bushes and pyramids. [A few Pears of merit ripening in September besides those our contributor names are: *Beurre d'Amanlis*, *B. Superfin*, and *B. de Beignines*. Those who have the space for a standard-tree, should plant the autumn or common Bergamot.

It is an abundant bearer in the south, and the fruit is melting, juicy, and richly flavoured. (Etc.)

Apples.—Early varieties of Apples of the type of Mr. Gladstone, Beauty of Bath, and Irish Peach, which are now in use, should be eaten direct from the trees. The same remark applies to the fruit-coloured variety Lady Sudeley, whose fruit's best flavour when stored, and are best eaten direct from the tree. Devonshire Quarrenden is an old favourite variety, and may be kept in the fruit-room for several weeks. This is seen in the best condition in the county from whence it takes its name, and where the pulp and rind attain a rich red colour, and the flavour is finer than I have remarked in other districts. In the midlands it does best when grown as a bush on the paradise stock, and given an open sunny position.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TESSNAR, The Glen, Innerleithen, Peebles-shire.

Strawberries for Forcing.—After the runners are thoroughly well rooted in pots, they derive but little further advantage from being left longer connected with the old plants. Those in small pots especially should be at once separated from the old plants, stand them on a hard substance for a few days before they are shifted into 6-inch pots to fruit. Those layered into 6-inch pots may also shortly be severed from the parent plants, and arranged thinly in a sunny place on a bed of ashes. This has been a favourable season for procuring young plants, there being large numbers of well-rooted runners that have not been layered. These may be lifted and potted up, and it will look after will grow to a serviceable size, either for late forcing or for planting-out. A moderately rich loam, with an 8-inch potful of wood-ashes to a barrow load of soil, covering the drainage with a layer of half inch of bones, suits Strawberries well. The ball of soil and roots should be in a moist state when the potting is done, and the soil should be firmly rammed down, a good space being left for holding water. Afford water very carefully at first, but when the pots are full of roots the plants will need a great deal. All runners must be pinched off, and the plants kept clear of weeds.

Pines—Potting Rooted Suckers.—Suckers obtained from the summer-fruiting plants will soon be ready for potting. It is well to divide the plants, the strongest Cayennes being shifted into 11-inch pots as soon as they are ready, and the Queens into 10-inch ones. Afford the plants a position near the glass in a light, airy house, and keep them growing gently now and through the winter months. There ought to be strong suckers available on the plants of the Smooth Cayennes and Charlotte Rothschilds, and these should be left till they have become 2 ft. long. When the suckers are taken, employ 7-inch pots for potting the larger suckers, and smaller ones for the weaker ones. Let these pots be clean or new, and well drained; use light turfy loam, roughly broken up, and a small quantity of bone-meal only, pot firmly, and plunge the pots in a bed having a bottom-heat of 85° or 90°. Keep close, or lightly shade them from bright sunshine for about a fortnight, and afford only just enough water as will keep the soil moist in a slight degree. When rooted, increase the amount of air and water; never allow the soil to become quite dry. Those plants of Queen Pines intended to fruit early next year should now be rested by gradually applying less water, less leaf, and rather more air. Only as much water should be afforded as will prevent the leaves from shrivelling; and by the end of the month they ought to be in a dormant state, and kept so by means of a lower temperature, the night heat not exceeding 65°, with a slight increase in the day time. Succession plants must be kept growing for another month, a moist atmosphere and a moderately strong heat being maintained.

Re-arranging the Plants.—A re-arrangement of the Pine plants should now be made, in

order to separate the fruiting from the non-fruiting ones, as many of those that were started from suckers of last summer's fruiting plants will have swelling fruit. Those plants that are not fruiting will have completed their growth, and should have air very liberally for the next six weeks, whenever the temperature exceeds 80°, maintaining the bottom heat steadily at 80°; and all plants well established, that is, well rooted, should have a bottom heat of 80 to 85, but recently-potted suckers, or those not having roots well established in the fresh compost, should have a bottom heat of 90° steadily maintained to insure speedy rooting.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PARK, Esq., Prestwold Hall, Leicestershire.

Hyaacinths in Pots and Glasses.—As soon as these bulbs arrive they should be unpacked, and without delay stood in a cool place till the potting can be performed. Before commencing to pot, let a selection of the earliest-flowering bulbs of Hyaacinths, Polyanthus, Narcissus, and Daffodils be made, and pot these within the first two weeks of September for forcing early. Later batches of all varieties may be potted up to the end of October, and after that date Dutch bulbs begin to deteriorate. The most important point in bulb-growing, particularly the Hyaacinth, is the potting compost, which should consist of turfy loam, dry cow-manure rubbed small, leaf-soil, and coarse, clean sand. These ingredients should be well mixed before-hand, and placed in a heap for a fortnight before proceeding to use them. For single bulbs of Hyaacinths, use a pot having a diameter of 5 inches, and if it be deeper than the ordinary flower-pot, so much the better. Having cracked the pot, fill it loosely with the compost, making a hole with the hand for the reception of the bulb, placing a handful of sand in the cavity; on this place the bulb, and press down the compost and bulb together, and make the soil firm with the fingers, with the crown of the bulb well above the surface. For miniature Hyaacinths, or varieties grown for making a good display of bloom, it is usual to put three bulbs in a 6-inch pot. The potting finished, afford enough water to permeate the entire mass, and place the pots on a bed of coal-ashes outdoors, and cover to the depth of 6 inches, as previously advised for Roman Hyaacinths. Here they should remain undisturbed for five to six weeks, when the pots will be found to be filled with roots and growth begun, and the bulbs in a suitable condition for bringing into cold frames and gradually inuring to the sunlight, and later into the forcing-house. Hyaacinths to flower in glasses should consist solely of the single-flowered varieties, which may be put in the glasses forthwith if wanted very early. Nearly fill the glasses with rain-water, in which place some small bits of charcoal, and arrange the bulbs in the glasses so that the bases barely touch the water, and place in a cool, dry, dark situation till the roots of the bulbs nearly fill the glasses, when they should be set in a moderately light position, free from cold draughts. If the water should become foul, or evaporate, the fresh water afforded should be of the same temperature as that of the room in which the Hyaacinths are growing. Hyaacinths which have been grown in flower-pots may have the soil carefully washed away with water applied with a syringe, and be placed in glasses.

Polyanthus, Narcissus, Daffodils, and late Tulips, require much the same kind of treatment as Hyaacinths, but the potting-soil need not contain so much manure, but rather more leaf-soil and loam. The bulbs should be potted rather deeper than Hyaacinths. The treatment after potting is the same as for the last named. It is usual to put Polyanthus, Narcissus to the number of three or five in a 7-inch pot; Daffodils to the number of five in a pot 6 inches in diameter, and Tulips five in pots of that size. It is better to err on the side of having too many in a pot than too few.

Mulmison's Cow Slips.—The season of bloom being over, potting will require immediate attention. Any two-year-old plants that are worth retaining should be transferred to 10-inch pots, each shoot being secured to a neat stake. For the next four or five weeks the plants should be well ventilated, but protection against heavy rain should be afforded. Succession plants which have given one spike of bloom, which are growing in 7-inch pots, should now be potted into 9-inch pots; and they will afford flowers after the larger plants are over next year. The earlier layers being in a condition to be severed from the old plants, may be potted in large 60's or 31-inch pots in a compost of turfy loam two parts, leaf-soil one part, and some fine mortar-rubble and charcoal. To the larger plants we add one part of turfy peat. Pot the plants firmly, but do not use the potting-stick or rammer, more especially in re-potting plants in pots up to 9 inches; and be sparing in the use of the watering-pot after re-potting. Afford plenty of air, and apply shade during bright intervals for a month or six weeks after re-potting.

THE KITCHEN GARDEN.

By J. MANSIE, Gardener to the Hon. MARK KOFFE, Breton, East-Devonshire, Devonshire.

Cabbage.—The earlier sowings being fit for transplanting may be put out in nursery lines at 4 inches apart, as may also the later sowings when fit. Some gardeners prefer to plant direct into the permanent quarters, considering the plants grow away more kindly if subjected to but one removal. There is no doubt that pricking-out does give a check, but it is beneficial rather than otherwise, as transplanted plants are furnished with numerous fibrous roots and a ball of soil if the operation be carefully performed with a trowel. There is then no check of any consequence; and the plants being of good size are less liable to be devoured by slugs, and they are more under the eye of the gardener, and remedies are easily applied.

Onions.—In most gardens the Onion crop will be ready for lifting, and should fine weather continue the bulbs can remain on the ground to get dry after clearing off weeds and rubbish. In the event of showery weather setting in, the bulbs must be laid on boards, hurdles, &c., or in an open shed or under-glass, turning them a few times, so as to thoroughly dry them. Onions should be stored in a cool place. The bulbs with the longest necks should be set aside for present use, or when the Tripolis are finished. If any of the latter are out-of-doors they should now be got under cover.

Late Peas.—In gardens where crossbills and other birds devour the Peas, and I am sorry to say they are a great worry here, netting, having a 1-inch mesh, must be placed over the rows, and pegged down to the soil, in order to keep these depredators from the crops. If the soil is still dry, afford water copiously, and a mulch if possible. Runner Beans claim the same attention in this respect.

Spinach sown towards the middle of the present month will need to be thinned to 5 or 6 inches apart, and the soil well stirred between the plants. Given a mild autumn, Spinach sown seed in the first week of September often proves remunerative in Devonshire gardens.

Lettuces and Endive.—A sowing should be made of the hardier varieties of Lettuce named in an earlier issue to stand the winter. Thin and transplant the stronger plants of sowings made early in August into an open position. During dry weather it is wise to plant in drills 1 inches in depth and 1 foot asunder each way, affording water to the same a few hours before putting in the plants. Tie up the forwardest of the Cos Lettuces once a week, and when the leaves are quite dry. Endive is not much in request, so long as good Lettuce can be had. To blanch them, they should be tied up similarly to Cos Lettuces, a flat tile or inverted pot placed over each, so as to exclude the light.

APPOINTMENTS FOR SEPTEMBER.

EXHIBITIONS.

	Preston and Fulford Horticult'ral Show (2 days).
WEDNESDAY, SEPT. 4	Glasgow International Exhibition, in conjunction with Glasgow and W. of Scotland Horticultural Society (2 days).
	Berwickshire Horticultural Society's show at Duns.
	Royal Caledonian Horticultural Society Exhibition, Waverley Market, Edinburgh (2 days).
WEDNESDAY, SEPT. 11	Derbyshire Agri-Horticultural Society's Show at Derby (2 days).
	Arundel, Littlehampton and District Agri-Horticultural and Poultry Show in the grounds of Arundel Castle.
SATURDAY, SEPT. 14	Central Horticultural Society of Nancy (France) great Horticultural Exhibition.

MEETINGS.

SATURDAY, SEPT. 7	Société Française d'Horticulture Meeting.
MONDAY, SEPT. 9	United Horticultural Benefit & Provident Society Meeting.
FRIDAY, SEPT. 10	Royal Horticultural Society Comm. Meeting at Drill Hall, Westminster.
TUESDAY, SEPT. 21	Royal Horticultural Society's Committees at the Drill Hall, Westminster.

SALES FOR THE ENSUING WEEK.

MONDAY, SEPT. 2	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY, SEPT. 3	Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, SEPT. 4	Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY, SEPT. 5	Dutch Bulbs, at Protheroe & Morris' Rooms—Clearance Sale of Greenhouse Plants, Glass Erections, Piping, &c. at Smith's Nursery, St. Mary's Gardens, St. Mary's Road, Lower Edmonton, at Protheroe & Morris, at 1 o'clock.
FRIDAY, SEPT. 6	Dutch Bulbs and Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE FOR THE ENSUING WEEK, deduced from Observations of Forty-three Years at Chiswick—59°.

ACTUAL TEMPERATURES:—

LONDON.—August 28 (6 P.M.): Max 64°; Min 48°.

August 29—Fine, chilly.

PROVINCES.—August 28 (6 P.M.): Max 61°; Scilly: Min 48; Orkneys.

The Selection of Root Crops for Seed

We are pleased to see that length growers are beginning to recognise the truth of what has been often pointed out.

VIZ., that the mere size of roots is not the point to be aimed at, inasmuch as these monster Mangels contain infinitely more water than nutritive matter—a very wasteful way of supplying water truly. Messrs. JAS. CARTER & Co. now issue the following remarks, which we heartily commend to all growers:—

"Previous methods of root selection have all had for their primary object increase in the weight and volume of the crop.

Agricultural chemistry has been applied to artificial manures and feeding stuffs, but the food-producing powers of roots have been neglected.

TOTAL SOLIDS.

The solids in a root contain all the nutriment. These solids are not uniformly nutritive.

All roots are (very largely) made up of water. The variations in the quantity of water and of the digestible solids represent enormous differences in money value to the farmer.

Five tons of one crop may contain as much solid food as ten tons of another.

The food value and digestibility or otherwise of the solids is determined by analysis.

SUGAR AND ALKALI COMPONENTS ARE OF FIRST IMPORTANCE.

Historical parallels to a degree are found in the great achievements by continental sugar-beet growers who have increased the saccharine matter in beets no less than four-fold.

The sugar and feeding qualities of Turnips, Swedes, Mangels, &c., can be increased and multiplied.

A small increase of sugar and its allied compounds adds enormously to the net feeding value of the roots.

SPECIFIC GRAVITY OF THE ENTIRE ROOT.

It is demonstrable that the higher the density of a root, the better the keeping quality.

A small deviation in the percentage of water alters materially the value of the crop in keeping properties.

SPECIFIC GRAVITY OF THE JUICE.

The higher the specific gravity of the juice, the better the feeding quality (albumen and carbohydrates).

The new method is to analyse each root planted for seed purposes, and reject all which do not reveal a strong combination of the above qualities.

Examination of roots and valuation of root-crops on these analytical principles bring to light their true and only value for feeding.

Scientific appliances are devised so as to test each root in a manner to a mathematical exactness, and yet not to destroy it for seeding purposes.

Roots which stand these crucial tests provide for the next year a hardier race and more generous food products.

Contrast this method with that of the 'seed beds' of the nineteenth century.

The new method, while not neglecting weight and size, uses them only as an instrument to convey the greatest net feeding value which is the only value either to the farmer or his live stock."

DRACÆNA, SYN. (ALETRIS), DRACÆNA FRAGRANS VAR. LINDENI (SYN. ALETRIS FRAGRANS).

(Supplementary Illustration).—In this handsome, green-leaved species from the coast of New Guinea we have a Palm-like shrub growing to a height of 10 feet under liberal cultivation. The head is composed of a comose fasciole of leaves arranged in several ranks, horizontally diverging, recurved, strap-shaped, lanceolate, and slightly channelled; the flowers are white, very numerous, and arranged in glomerate umbels. The plant flowers in the stove at various seasons, and the flowers have the scent of newly made hay. It is a good decorative plant, and can be used in the summer months in beds of sub-tropical plants if previously inured to sunshine. We are indebted for the opportunity of figuring the plant to MR. L. G. WALKER, gardener to Sir H. B. BURY, Bart., Barton Hall, Bury St. Edmunds.

MR. OWEN THOMAS.—A sympathetic address, handsomely engrossed, with views of Mr. THOMAS' residence at Frogmore, was presented (on the 23rd inst.) by the garden staff to Mr. THOMAS on the occasion of his retirement from his position as Superintendent of the Royal Gardens, Frogmore. The gardeners at the Private Gardens, Hampton Court; White Lodge, Richmond; and at the Royal Pavilion, Aldershot, were also associated in this interesting ceremony. The address, which was presented on behalf of the subscribers by Mr. EDWARDS, is creditable to all concerned, and must be very gratifying to the recipient. We subjoin a copy of the document:—

"ROYAL GARDENS, WINDSOR.

TO OWEN THOMAS, Esq., V.M.H.

We, the Staff, Young Gardeners, and Employés of the Royal Gardens, Windsor, have learned with deep regret that you are retiring from the position you have so ably filled for the last ten years as Superintendent of the Royal Gardens.

It has been the privilege of most of us to have worked under your direction the whole of that time, and we desire to place on record our grateful acknowledgment of the courtesy and kindness we have invariably received from you; also to bear testimony to the earnest and energetic manner in which you have carried out the responsible duties of your office, which has been an example to all.

We ask your acceptance of this Address as a slight token of our esteem and regard, and

pray that Almighty God will bless you with health, happiness, and prosperity for very many years.

Signed, on behalf of 130 subscribers, June 29, 1901:—

THOS. EDWARDS, Chairman; JOHN DUNN, Treasurer; EDW. HARRIS, Secretary; W. BARKER, JAMES BROWN, J. CHENNELL, JAMES GREEN, G. HAMPTON, J. TACK, J. S. LINDSAY."

MR. THOMAS, in his reply, bore testimony to the loyal support he had always had from the staff, and presented each member with a portrait of Mrs. THOMAS and himself.

FLOWERS IN SEASON.—Messrs. KELWAY send us a selection of magnificent Gladioli, robust in habit, large in flower, perfect in shape, rich and varied in colour. To be sure, the flowers all face one way; but that is esteemed a special virtue in Gladioli. The most noteworthy varieties are Nilus, with magenta-coloured flowers; Taunton Dean, salmon-pink, with white at the base of the segments; Lord Roberts, of a similar colour, but with less white; Mrs. Wood, rich crimson; Sir Evelyn Wood, reddish-crimson; Governor Cleveland, rich rose, with white stripe; Regalia, pale magenta; Lady Llangattock, salmon-pink, with white stripe; and Kenwyn, pale buff, tinted with pink.

"GUIDE TO THE GLASGOW BOTANIC GARDENS."—This guide to the gardens and the conservatories and greenhouses is by Mr. C. SHERRY, and appears at an opportune moment, when the exhibition at Glasgow is drawing many visitors to the city. The garden has a famous history, for it was here that Dr., afterwards Sir, WILLIAM HOOKER succeeded in introducing so many novelties and interesting plants, the Professor availing himself of the opportunities furnished by his influence with Glasgow merchants and shippers. There is first in the book before us an introduction, giving a brief history of the gardens, then accounts of the glasshouses and descriptions of the more notable plants therein, which should enable the most unlearned to recognise the specimens. Next is given an account of the hardy herbaraceous plants, arranged according to their natural orders; and, after this, lists are published of the principal Musci, and Hepaticæ, and fungi, and of the birds to be found in the gardens. Among the birds, it is curious to find the singularly sparrow-hawk named first, and as a "too-frequent visitor." The Guide has many illustrations, and should prove useful to non-botanical admirers of the Gardens who wish to understand a little about the collections around them. The book is published by DAVID BRYCE & SON, Glasgow.

HANDBOOKS FOR THE HOLIDAYS.—Many attractive handbooks written for intending holiday-makers, have reached us. Among these is vol. 12 of the Homeland Handbooks, "Dulverton and the District; the Country of the Wild Red Deer" (second edition), by F. J. SNEEL (St. Bride's Press, Ltd., 21, Bride Lane, Fleet Street). This volume treats of How to get to Dulverton; Dulverton, its scenery and story; Exmoor sheep and ponies; for fishermen; stag, fox, hare, otter, and badger-hunting; flowers and Ferns, and pleasant places on the Exmoor border. This addition to the series is quite equal to its forerunners; it is lightly written, and plentifully illustrated.

"Views of Hastings and St. Leonards, the popular Health and Pleasure Resort," is the name given to an attractive album of pictures, giving a good idea of the watering-places under discussion. There is a preface, dealing with the historical and other attractions of the town, and the little album is a pleasant variation from many similar books because it has no

advertisements to distract the reader from his chief subjects of interest. The publishers are F. T. PARSONS, LTD., 11, Claremont, Robertson Street, Hastings.

The Great Eastern Railway Company sends us some "annotated time-tables" concerning the Cromer and Mundesley expresses. There is a brief commentary on the objects of interest along the line, and some pretty pictures, which should still more attract visitors.

THE JERSEY POTATO CROP.—A Jersey correspondent kindly forwards us some interesting statistics relating to the yield and value of the Potato crop from May 1 to July 20:—

Date of Sample.	Tons.	Average Weekly Price.	Weekly Totals.
1901.		£ s. d.	£ s. d.
From May 1 to May 15	1,215	27 1 8	1,656 10 0
From May 15 to May 22	1,275	27 1 8	1,647 11 8
From May 22 to June 1	1,215	27 1 8	2,922 11 8
From June 1 to June 8	1,260	25 8 4	6,504 18 4
From June 8 to June 15	1,260	25 8 4	6,168 0 8
From June 15 to June 22	1,260	25 8 4	6,256 0 8
From June 22 to June 29	1,260	25 8 4	7,068 0 8
From July 1 to July 6	1,260	25 8 4	4,200 0 0
From July 6 to July 13	1,260	25 8 4	4,780 0 0
From July 13 to July 20	1,260	25 8 4	3,214 4 4
Total.	13,170		58,913 13 8

From this statement it will be seen that the amount exported was approximately 51,750 tons. This is the lowest tonnage since 1887, when just over 50,000 tons were exported. This of course points to a poor crop, but it must also be remembered that less land was in Potatoes this year than for some considerable time past. The monetary return for these 51,750 tons was £320,901 15s., the smallest result since 1890, and almost £125,000 less than last year. In 1887, when the tonnage was less, the amount received was just over £100,000 in excess of this year. From May 1 to May 18 the average was 52 18s. 8d. per ton, while for the last six days, that is from July 15 to July 20, the price was but 25 8s. 4d. per ton. The heaviest days were from June 10 to June 15, when 214,155 packages, representing 11,900 tons, were exported. From May 27 to June 1, £13 2s. was the average price. After this latter date, however, there was a big drop, and the next six days' average was only per ton, and the next six days' show but an average price of 25 8s. 4d. The following table shows the amount and value of the Potato-crop each year from 1883 to 1901, both inclusive.

Year.	Tons.	Value.
1883	39,468	262,472
1884	53,655	375,841
1885	18,224	139,074
1886	64,529	369,155
1887	59,674	423,588
1888	69,988	212,169
1889	52,590	264,417
1890	54,199	255,681
1891	66,410	457,942
1892	66,292	376,265
1893	57,762	327,366
1894	69,695	462,995
1895	54,280	259,989
1896	64,583	435,392
1897	53,555	362,274
1898	56,227	398,299
1899	65,040	439,424
1900	54,942	435,572
1901	51,750	326,904

MR. MARTIN SUTTON.—In the absence of his Excellency M. CAMBON, the French Ambassador, M. REY, Officier d'Academie, yesterday, at the Abbey Hall, Reading, in the presence of a large assembly, presented to Mr. MARTIN J. SUTTON, head of the firm of SUTTON & SONS, the insignia of the Ordre du Merite Agricole, as a further recognition by the French Government of Mr. SUTTON's successful efforts in the improvement of grass and arable husbandry in France and England, and especially in the advancement of agricultural education in both countries. Mr. SUTTON was decorated with the Cross of the Legion of Honour by the President of the French Republic in 1878, for international services rendered to agriculture.

LILIAM SULPHUREUM.—Messes. T. WARE sends us a flower of this species, sometimes erroneously called L. Wallichianum var. subpernum, and sometimes L. ochroleucum. It has long, funnel-shaped flowers, 6 to 7 inches long, with narrow, oblong, acute segments, recurved at the tips, the inner ones broader than the outer; all white externally, flushed with primrose-yellow, and marked with a central line of pale purple internally; deep yellow in the centre. The anthers are golden-brown, the stigmas 3-lobed, club-shaped. The flower emits a powerful fragrance. A coloured figure is given in the *Botanical Magazine*, tab. 7257.

THE SOCIETY OF LANDED ESTATE AGENTS.—We have pleasure in announcing the inauguration of the Society of Landed Estate Agents, the principal objects of which are: (1) To promote and protect the interests of the profession. (2) To advise by mutual conference on all matters of practice relating to the management of landed estates. (3) To disseminate information by means of publications, correspondence, &c. (4) To watch legislation on matters affecting the interests of agriculture and land generally; and (5) To provide a centre in London for members. The provisional Council consists of the following gentlemen: Colonel Halifax Wyatt, for many years agent to the late Earl of Sefton, K.G., President, *pro tem.*; E. F. Chamber, Esq., agent for the Rolle estates, North and South Devon; Dudley W. Drummond, Esq., D.L., J.P., agent for the estates of the Right Hon. Earl Gwendor, Sir James Drummond, Bart., and others in South Wales; Reginald C. Glamville, Esq., agent for the Antony and other estates in Cornwall; Godfrey Lipscomb, Esq., agent for the Margam estates, South Wales; E. G. Wheeler, Esq., Chief Commissioner to His Grace the Duke of Northumberland; and the Secretary (*pro tem.*) is Mr. William Broomhall, 16, Cockspur Street, Pall Mall, S.W. Membership is restricted to landed estate agents, their pupils and assistants.

HOME CORRESPONDENCE.

THE LATE MR. JOSEPH MEREDITH.—I should like to add one small tribute to the kindly disposition of the late Mr. Meredith, as what little I learnt about the special sort of cultivation needed by the Madresfield Court Grape was given me by him. He was really the man who first brought to light the wonderful capacity of this grand Grape. The first exhibition bunches of this Grape I saw were those he staged in Liverpool twenty-four years since. They were not monstrous bunches as we now see them, but they had extremely fine berries, even in size, and covered with that dense bloom which makes all the difference in examples of this Grape. Mr. Meredith at that time had one Vine growing near the partition of a small vinery, and seeing how suitable the variety was for extension, he removed the partition and gave the Vine much greater space. It was, however, specially in the cul-

ture of that prince of Grapes Black Hamburg that Mr. Meredith became famous—and certainly the existing conditions were none too favourable. The small lean-to vinery from which he cut his grand examples of this Grape had an eastern aspect; but, as Mr. Miller says, health of foliage was his leading feature. When showing me, with pardonable pride, these Vines, along with the Madresfield Court above alluded to, he endeavoured in his kindly and forcible manner to show the absolute necessity of obtaining and maintaining perfect foliage, as without this, he said, "you cannot have satisfactory grapes." All practical Grape-growers know that this is quite true, and experience shows this to be true, and true also of the opposite, *E. Molgineux*, [Mr. Meredith showed, at the Royal Botanic, Regent's Park, on July 5, 1865, the biggest bunch of Black Hamburg Grapes of which we have any record, viz., 9 lb. It had six shoulders, each as large as an ordinary bunch, and the fruit was jet black, and had a beautiful bloom. Ed.]

GOOSEBERRY GUNNER, ALIAS COBHAM.—I notice you refer to Gunner as the old yellow hardy variety. My experience of Gunner is that it is a dark green both inside and out, more round than oval, large, very hairy, an excellent cropper, and one of the best early dessert Gooseberries grown. In east Kent it goes by the name of Greengage or Guiner. With reference to Howard's Lancer, it is one of the finest flavoured late Gooseberries, similar in appearance to White Lion, quite as large, but more oval. I have seen bushes 5 to 6 feet through the centre, and nearly as high, carrying a bushel of fruit. Although it is a very late Gooseberry to pick ripe, it is ready as one of the first to pick green. I quite agree with the editor's remarks, that they are two good things too long overlooked, W. H.

BOUSSINGAULTIA BASELLOIDES (p. 155).—This luxuriant-growing plant is quite hardy here, having been planted at the foot of a south wall ten years ago, and it has received no protection at any time. The shoots get killed down by the first autumn frost, but throw up strong young growths again towards the end of May, which reach the top of the wall (12 feet) by the end of July, producing its small, white, fragrant flowers early in August. Our only trouble with it is to keep it from encroaching on other creepers, too much, *Charles Dixon, The Gardens, Holland House, Kensington.*

There can be no doubt of the complete hardiness of this plant. I have grown it here, out-of-doors, for certainly over twenty years, and I do not think any winter would hurt it, though its roots are absolutely on the surface. It dies down every winter, but by the middle of June it finds its unassisted way up a wall, and grows 10 feet or more in that time. *H. N. Ellacombe, Bilton Vicarage.*

PELAGONIUM ENDLICHERIANUM (p. 119).—You suggest that this might be used for hybridising purposes, to get a hardy variety. Would not *P. australe* do better? It is more hardy, and the flower, though small, is perfect. It seeds freely, and the seedlings come up everywhere; in fact it is almost a weed. I enclose flowers. *Henry N. Ellacombe, Bilton Vicarage.*

SOME EXCELLENT PEACHES.—On Monday, August 19, I had the pleasure of paying a visit to Moor Park, the beautiful residence of H. Williams, Esq., near Harrogate; and amongst the many things of interest, I noticed what I may say was the finest lot of Peaches I have seen for many years. The variety which took my attention most was a variety which the gardener, Mr. G. C. Warrior, informed me was "Exquisite." It is a young tree, and carried about forty very fine fruits of a very high colour, and excellent vinous flavour. It is a variety worthy of more extensive cultivation. My friend has also a very promising lot of *Chrysanthemums*. *Geo. Snelh, Barnley Gardens, Olney.*

SWEET-FRUITED STRAWBERRIES.—Just a word in appraisement of some of the well remembered varieties of bygone years. The

are many persons to whom the acidity of some of our fine, large, new varieties of Strawberries are distasteful, and who would gladly go back to the popular varieties of fifty years ago, which had not the rather doubtful property of briskness and sprightliness to the extent of setting one's teeth on edge. I may instance the Hawthorn in several forms, Trollope's Victoria, the plant a great bearer, and a fruit round and pinkish, of not quite the largest size, and that was not good for travelling; but as it was not then the custom for a private family to sell its garden produce, that was of no account. Then there was Keen's Seedling, which few will grow now because it is not big; but it is very sweet and nice flavoured, and hard to beat. British Queen was as highly prized then as now, and later there came out Dr. Hogg, which resembles it in most respects, but will grow in almost any soil, which is not the case with British Queen, and the fruit ripens to the tip; Myatt's Eliza, equal to either of these in flavour, is a good bearer and hardier; Carolina superba has fruits of a very large size, ovate, and regular; few surpass this variety for flavour, although many do so in fruitfulness. The writer has had it growing in a grass orchard, where it received no more attention than an occasional dressing of dung; the variety bears well under the shade of trees. Frogmore Late Pine is a variety that should not be omitted, for the flesh is tender, juicy, red throughout, and richly flavoured when quite ripe; it is late, and a free bearer. Those who are not captivated by mere size may grow that very early Strawberry Black Prince, which has small obovate-fruits of a dark red colour, and prominent seeds. Along with these old varieties, which I fear are in too many gardens being elbowed out by the more showy Nobles, Royal Sovereigns, Waterloo, and Trafalgars, mention should be made, I think, of the richly-flavoured novelty Veitch's Perfection, a cross between British Queen and Waterloo. It has great sweetness, and a flavour markedly resembling that of British Queen. There are other old varieties having a sweet, pleasant flavour, but their inclusion would make my note unduly long, and I refrain therefrom; and the names and descriptions of the new, are they not to be found in all present-day fruit nursery-men's lists? *Meator*.

BASIC SLAG.—For the last five years I have used basic slag largely—many tons per year—on various crops, and have found it very successful in all instances save one. This curiously happened in two fields, but with the same crop, viz., yellow Turnips; with 2 cwt. superphosphate of lime, I used the same quantity of basic slag per acre when drilling the Turnips in July. The Turnips grew away freely at the first, but in the autumn they commenced to rot, and before Christmas nearly all had disappeared. In one of the fields I used 1 cwt. superphosphate per acre alone on 3 acres as an experiment, alongside the basic slag. In this instance not a single Turnip was lost, although every other condition was the same. Since then I have not employed basic slag for roots, but intend to give it an extensive trial for the next season's Swede crop, as an experiment against the growth of "finger-and-toe" in this root. I have employed this manure, too, in Apple culture, but I cannot say the results have been at all satisfactory, certainly not to the same extent as farmyard manure. It is with grass that my experiments with basic slag have been the most extensive and satisfactory. Having over 100 acres of grass-land in hand, and this not satisfactory, I endeavour to improve a certain number of acres annually. As early in November or December as possible, I mix 8 cwt. basic slag and 1 cwt. kainit together, and spread this evenly over an acre, using one of Ben Reid's Basic Slag Distributors, which does the work so much better in every way than can be done by hand. Some persons may think this is an enormous quantity to sow over an acre; well, it is a good dressing, but I find it lasts with striking results for four years, and perhaps longer. Certainly the results justify

the outlay. The grass is so much thicker, the "herbage," as it is termed here, is so much improved; many sorts of Clover grow where not any was to be seen before. Even if nothing was added to the pasture in weight of grass, the addition of the Clover is well worth the outlay, as these plants make all the difference to the pasture, whether it is intended for hay or feeding. When grazing the flock, the shepherd can point out the spots where basic slag was used, even if he did not know where it was applied, as he finds a difficulty in keeping the sheep away from those portions, for they evidently find the grass so much sweeter there. It is said to be an excellent stimulant for Wheat crops; in that case it should be applied when sowing the Wheat in October. I may say that the soil here is somewhat heavy in character, although not wet, owing to the presence of so many flints. Not far from here excellent results have been obtained on grass-land which is of a gravelly nature. *E. Molyneux, South Hants.*

HELIENUM PUMILUM MAGNIFICUM.—It, as Mr. Perry says, this plant is a cross between *H. autumnale* and *H. pumilum*, it is unfortunate that it was not given another name, as the present one would lead anyone to think that it is simply a large-flowered form of *H. pumilum*. It does partake much of the character of that useful border flower, but it is a much superior plant. As it is growing in my garden it proves one of the best of the yellow Composites, which are now so plentifully in bloom. It has proved, also, a good dry weather plant, and is thus acceptable in a garden where summer droughts tell badly on flowers which do not like to be dry at the root. It is also of a good, erect habit, and in a rather sheltered corner has stood erect without stake or tie—a circumstance which has added much to its beauty. In my light soil it grows about three feet high, and bears a number of solitary soft yellow flowers nearly three inches across. The forms in which it was referred to in the *Gardeners' Chronicle* of July 28th, 1898, were not too complimentary, and one is grateful for thus having been introduced to so good a plant. *H. Arnott*.

PRUNUS PISSARDI FRUITING.—Some little time ago a correspondent in the *Gardeners' Chronicle* doubted if *Prunus Pissardi* ripened its fruit in this country. I enclose one taken from a bush that is growing here—the only fruit I can see on it. The severe frost that occurred while the tree was in flower is no doubt the cause of the poor crop. Two years ago this and another bush carried several fruits which ripened nicely; but I cannot say I appreciate the flavour of them. *James Mayne, Bilton Garden, Devonshire.*

HEMEROCALLIS AURANTIACA MAJOR.—I have been waiting patiently for three years to see a bloom of this plant, and was rewarded by seeing my first bloom on August 10. It was of a beautiful soft orange colour, larger than the double form of *H. fulva*, with broader foliage, but not so tall, about 15 inches. It is far and away the best of the race I know, and one of the best large herbaceous plants I have seen for many a day. I have never seen the fact of its blooming mentioned in your paper, and not long since a correspondent wrote and suggested that England was not hot enough. This looks as if it did not bloom freely. It seems to increase slowly, and I take it that it wants age. Mine is a very poor sandy soil, *W. R. Fryer, Verwood Manor, Wiltshire.* [This is, by no means the first time this handsome variety has flowered in this country. One of the earliest blooms exhibited was that figured in the *Gardeners' Chronicle*, July 20, 1895. Ed.]

LILIUM CANDIDUM.—It may interest some of the readers of the *Gardeners' Chronicle* to know of our success in sulphuring the bulbs of *Lilium candidum*. In 1898 we had in these gardens a very fine border of *Lilium candidum*, such plants as are seldom seen. In 1899 they were so badly attacked by disease that not a single flower opened. We at once adopted the remedy of sulphuring the bulbs, which was

described in the *Gardeners' Chronicle* at the time, and carried it out to the very letter, with the result that in 1900 they flowered well, although, on account of the lifting, they were not so fine, for they greatly resent this. This year there is still a great improvement. A photograph shows how well the Lilies have done. We hope next year that our Lilies will quite come up to the standard of 1898. *C. Cupp, Gardener, Satis House, Gosford, Suffolk.*

CRASSULA RUBICUNDA.—I have been desirous of acquiring the above plant for some few years. I cannot ascertain where it can be got. I had a plant resembling it sent me under that name, but it proved to be wrong. *C. rubicunda* is a strong-growing plant, has channelled leaves, finely speckled with a dark colour. The leaves are 3 or 4 inches long, stems stout, about the size of one's little finger, and producing in autumn a large head of Roehia-like flowers, but darker in colour. Height about 1 foot or more, according to conditions. A plant was received from the Royal Gardens, Kew, under that name many years ago. I should highly esteem any information of its whereabouts. Surely it must be in someone's keeping, such a beautiful plant as it is. *J. C., care of Editor.*

CULTURAL MEMORANDA.

CUCUMBERS.

LARGE, handsome Cucumbers may suit some people, but those of medium size are better, especially when space is limited. A variety which will grow to the length of 4 inches is large enough for family consumption; and the variety which gives a large number of these is better for the gardener than the long, sparse-fruited ones. In order to cut Cucumbers continuously for a long period of time, the bine must be kept thin, the old barren parts removed, and young bine laid in; and besides this, dressings of suitable materials should be applied when the roots reach the surface of the bed. Dryness at the roots must never occur, neither should the soil be afforded an excess of water. Liquid manure may be applied occasionally, and for this purpose nothing is better than the drainings from a cow-stall. *H. Markham, Wrotham Park Gardens, Barnet.*

SAGITTARIA JAPONICA.

(DOUBLE FLOWERED VARIETY.)

OUR illustration (fig. 51) was taken from a drawing by Mr. Worthington Smith, of a specimen exhibited before the Royal Horticultural Society, on August 13, by Mr. Hudson, gr. to Leopold de Rothschild, Esq., Gunnersbury. It is very similar to our common Arrow-head, but the flowers are much larger and very double. We presume the plant is nearly, if not quite, hardy, and if so it will be a most desirable addition to our "water-garden."

SOCIETIES.

ROYAL HORTICULTURAL.

AGUST 25.—The Dudd Hall on this occasion presented an unusual appearance, exhibits being comparatively few, and the proceedings scarce ample.

The chief features of the meeting were cut flowers of hardy bellflowers plants, a few rhodone hybrids, *Gladious craniavensis*, *Caladiums*, and *Aloesias*; and two excellent collections of fruits, one of them indicative of early varieties of Peas and Apples. Owing to the absence of Fellows and others from London, visitors to the Hall were but few.

Floral Committee.

Pres.—W. Marshall, Esq., in the Chair, and Messrs. C. T. Drucey, Jas. Walker, H. B. May, Geo. Nicholson, R. Dean, G. Reuther, J. Jennings, J. Hudson, W. Bain, W. Howe, C. R. Fielder, C. Dixon, E. T. Cook, W. P. Thomson, E. H. Jenkins, J. W. Barr, G. Paul, and R. C. Nottell.

Messrs. HARRISON & SONS, nurserymen, Leicester, showed a collection of *Pianthus diadematis flore pleno*

and *D. diadematus*, the type with single flowers. The double forms appeared valuable for variety's sake, but in regard to effectiveness, the single-flowered forms are to be preferred, all the fruits occurring in the latter appearing in the former. Alongside of these were bunches of blooms of *D. Heddlewigii*, *D. chinensis flore pleno*, and *D. laematis*. The firm showed about a score of modern varieties of Sweet Peas of good quality for the present date.

Messrs. MAURICE YOUNG & SONS, Milford Nurseries, Milford, W. Saluting, showed an interesting collection

splendens, somewhat larger than the type, and *L. rubrum*. The eighteen bunches of Sweet Peas which he showed in separate colours, were excellent for the time of year (Silver Bank-san Medal).

MR. MAURICE PIERCE, The Nurseries, Christchurch, Hants, showed a very stately and herbaceous perennial, *Gladolius*, bulbous plants, &c. Amongst the *Gladolius* were, besides those whose names are found in our list of Awards of Merit, *G. Minstre* Pichon, rosy-purple with white blotch and streaked with rosy-erimson, a pretty variety; and several of *G. Lemoni*, as Baron

flower *Phloxes*, *Eupatorium purpureum*, *Apera arua dimaeca*, with awns of silvery brown—a graceful subject for bouquet making (Silver Flora Medal).

Messrs. BARR & SONS, 12 and 13, King Street, Covent Garden, W.C., had a small exhibit of hardy herbaceous perennials, Water-Lilies, &c. We remarked *Heliopsis mollis*, *Kuhphoda corallina* superba, a fine, brightly coloured bloom; *C. Patzeri*, several *Monibetrias*, flowerspikes of the old Lobelia cardinalis, *Abstermeria fistulicoma*, many bright-looking *Phloxes*, Tiger Lily, &c. This firm likewise made a great show with cut spikes of *Gladolius gandavensis*, many of them of great beauty, but none received any special award. The bank of bloom, which consisted of about ten bunches, in as many varieties, was faced with cut *Pentstemon* and *Pompon* and other *Dolichus* a Silver gilt Banksian Medal.

A BENSON, Esq., Upper Gifford Park, Surrey, showed flowers of *Lapageria rosea* var. *Bensoni*, which were of a lighter tint than those of *L. rosea*, especially in the interior of the flower; and some of *L. rosea* var. *gattonensis*, which did not appear to differ greatly from the type.

Messrs. CANNELL & SONS, Swanley, Kent, exhibited a plant of *Koehia scoparia*, a plant with linear leaves of a light green colour, 2 to 3 inches in length, and of an exceedingly dense, bushy habit of growth, and forming a pyramid 3 feet in height.

DR. E. BAYNE, Worthing, showed two blooms of *Datura Knightii*.

Messrs. H. & L. CO., NURSERY, Bush Hill Park, Epsom, showed two blooms of *Hippastrum procumbens*.

A plant of *Pteris Betheli* was shown by Mr. G. BETHEL, Hayes Nursery, Uxbridge—a species of a bold spreading habit.

Messrs. JOHN LAING & SONS, The Nurseries, Forest Hill, arranged a semicircular floor group of *Chalcidiums*, 2000 in its longest diameter, and consisting of small plants of the more showy modern varieties (Silver Flora Medal).

MR. JOHN RUSSELL, Richmond Nurseries, Richmond, Surrey, made a capital display with a floor group of *Veronica*s, including the species and varieties *argentea*, *2-riducosus*, *Sanderiana*, *macrorhiza*, *Watsoniana* (very large leaf), *Lowi grandis*, *Martin Calyciae*, *metallica*, *Johnstoni*, *Marcelhanemensis*, and others. The plants were excellently grown, and faultless in foliage (a Silver gilt Flora Medal).

A few *Dolichus*, a few varieties, were shown by Mr. G. S. S. PEEKER HAYDON, Orpington, Kent. They were of good bloom in nice condition.

A variety of *Abernuthera amoena spectabilis*, with a beautiful name *grandiflora*, was shown by Messrs. CANNELL & SONS, Swanley. It is an effective plant, with foliage mostly of a bright red tint.

SIR THOMAS LAWRENCE, Bart., & Mr. FOUN, showed a variety of *Gladolius* known as *Nance*, a flower of blue and purple tints, and a variety of *G. Nanceianus* (sp. *Bicolor*), of a scarlet colour, and having a crimson or red-tinted web with white on the lower segments.

FIRST CLASS CESTRUMS.

Asclepias speciosa *peruviana* *plum*. A fine, well-grown specimen, 6 inches in diameter, shown by LORD ROBERT DE ROTHSCHILD, Esq., Gunpowder House, Apsley Ter., Mr. J. Hudson.

Asclepias speciosa *albina* *plum*. A large, opaque white bloom. Shown by LORD ROBERT DE ROTHSCHILD, Esq., Mr. J. Hudson.

AWARDS OF MERIT.

Chalcidius Leonardii *Lalage*. A flower having a white ground with a blotch of dark crimson on the lower segments. Shown by Mr. MAURICE PIERCE, Christchurch, Hants.

Chalcidius Colchidicus *Callist. Herb.* A scarlet self, with blue splashes of a deeper tint, and some of white on the lower segment. The flower in its widest part measured 1 1/2 inches. Shown by Mr. MAURICE PIERCE, Christchurch.

Chalcidius Callist. Ligea. A climbing variety, with a flower of a rich rose purple tint, and about 3 inches in diameter. Shown by Messrs. BARR & SONS, King Street, Covent Garden.

Chalcidius Callist. Bicolor. A variety of which the foliage is more yellow than green. Shown by Mr. L. KROEMER, Rorania Nursery, Randon Hill, Croydon.

Gladolius Hybridus *Peliceps*. A variety apparently of the *Chalcidius* strain, very large, being 6 inches wide, and all round with white feathering on the lower segments. Shown by SIR THOMAS LAWRENCE, Bart., Bedford Lodge Park.

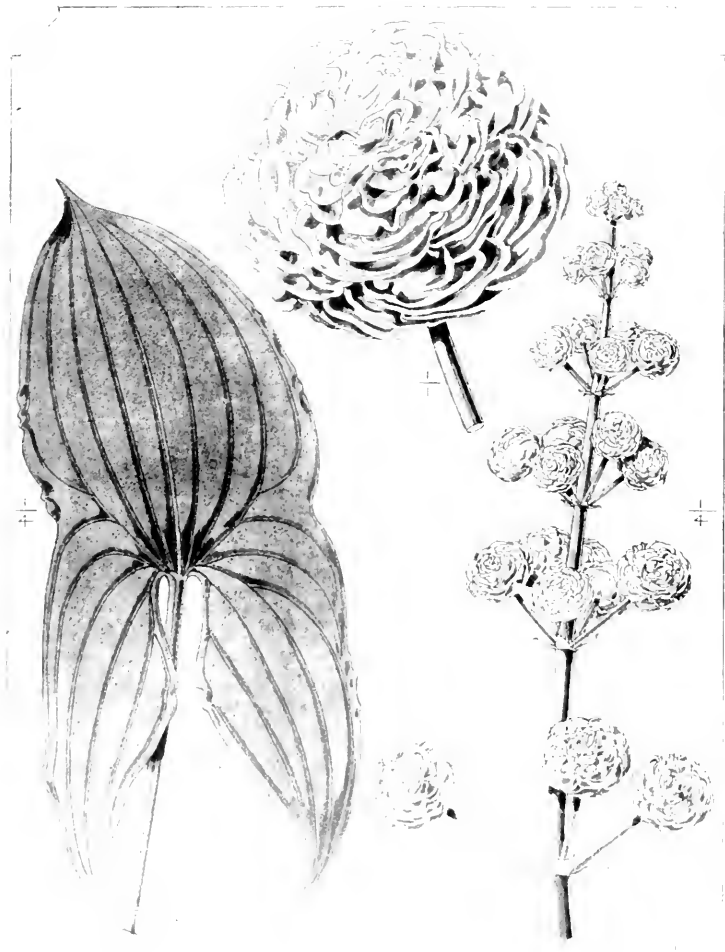


FIG. 54. SAGITTARIA JAPONICA; HARDY WATER PLANT; FIG. FRS WHITE, (SILE P. 170.)

of *Chalcidius*, *Eupatorium purpureum*, *Apera arua dimaeca*, with awns of silvery brown—a graceful subject for bouquet making (Silver Flora Medal).

MR. ARTHUR W. WARD, Riverside Nurseries, Colchester, showed a small collection of hardy perennials and Sweet Peas, including *Monibetria* *superba*, *Papilion*, *M. Goble* *double*, a large coloured flower, not much expanded, *M. Botton* *grandiflora*, *Lobelia* *lignata* and

Joseph Hudd. Sals. Flamm. speciosa, *Polemonium* *Gold-channema* were shown. The white flowers are very minute, and arranged in branching terminal and axillary panicles. *Stachys amoena* *Chelone glabra* with a pretty tint of blue; *Lespedeza innoxiosa* *ensis*, *Statice* *Boul. de la Haye*, having yellow flowers; *Helianthus mollis*, a fine Japanese species with downy stems, leaves, and calyx, disc and ray of a yellow colour. The blooms have a width of 3/4 in., and the plant a height of 5 feet. We noted *Monibetria* *Golden Sheet*, *Hedysarum multigratum*, *Helenium autumnale* *superbum*, larger than the type, *Verbena longifolia* *subsessilis*, with fine flower spikes of a dark blue colour; *Quadrifida* *speciosa* *rosea*, *Heliopsis* *serotiflora*, a fine big

Orchid Committee.

Present: H. Vetch, Esq., in the Chair; and Messrs. de B. Crawshaw, E. Hill, J. G. Fowler, T. W. Bond, H. T. Pitt, F. J. Thorne, H. A. Tracy, and H. J. Chapman.

Messrs. J. VETCH & SONS, Ltd., sent a most interesting group of hybrid Cattleyas and Laelias, the most attractive among them being the remarkable *Laelio-Cattleya* × *Digbyano-Mendeli*, the flower being much larger and more highly coloured than the typical introductions of M. Mason; L. C. × *Anderiana* (*dicolor* × *elegans*), showing the intermediate characters of the parents; L. C. × *Wellsiana superba* (*Trianae purpurata*), has larger flowers than the type, the petals and sepals rosy-lilac, the broad front lobe of the lip rich crimson, shading to yellow in the throat; L. C. × *Rohm Mesures var. Ena* (*xanthina* × *Schofieldiana*), has bright golden-yellow sepals and petals, and a rich rosy-purple lip; *Laelia* × *Pavonia* (*dendrosa* × *purpurata*), rosy-purple sepals and petals, and crimson lip, lined at the base with darker markings; it has the intermediate characteristics of the parents from which it was derived, and L. *Stella* (*crispata* × *elegans*) one of the most useful of the older hybrids, flowering during a season when Orchid flowers are scarce.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent a very meritorious group, considering the advanced season of the year, and was awarded a Silver Banksian Medal. The most prominent subjects in the group were *Cypripedium* × *Chapmanii* (*dellatulum* × *Curtisii*), the dorsal sepal creamy-white, spotted and lined with purple at the base, the unusually long petals richly suffused with crimson, and covered with minute brown spots; the lip purple, shading to white; *Laelio-Cattleya* × *Callistoglossa ignea* (C. *Warszewiczii* × L. *purpurata*), with two flowers; L. C. × *Broomfieldensis* (C. *Dowiana* × L. *pumila* *Bayana*) has the distinct purple longitudinal lines through the lip; *Cattleya* × *Atalanta* (C. *guttata* × C. *Warszewiczii*); *Vanda* *corallina*, *Odontoglossum*, *Oncidiums*, and *Miltonias*, were well represented.

J. J. COLEMAN, Esq., Gatton Park, Reigate (gr. Mr. Boudin), sent a pretty variety of *Odontoglossum* (*trifidians*), and the natural hybrid *Miltonia* *Travassosiana*, a distinct variety of the M. *Regnolii* section, with yellow sepals and petals.

D. B. CRAWSHAW, Esq., Rosefield, Sevenoaks, also sent interesting plants of natural hybrid *Miltonias*, and varieties of M. *Regnolii*.

REGINALD YOUNG, Esq., Sefton Park, Liverpool, showed the interesting *Cypripedium* hybrid C. × *Kuhle* (*canthium superbum* × *Youngianum*).

DREWETT DREWETT, Esq., Kiding Mill-on-Tyne, sent *Cypripedium* × *Bryan* × C. *tonsum* × C. *Levigatum*, and C. *Miss Fanny Wilson*, C. *Standerianum* × C. *Argus*, but the flowers were past their best.

Mr. W. M. APPLETON, Weston-super-Mare, showed *Cypripedium* × *Massalinum* = *superbe* and *Rothschildianum*; C. × *gigas* = C. *Lawrenceanum* and C. *Harrisiana*, C. × *Transvaal* = C. *Chamberlainianum* and C. *Rothschildianum*, showing its origin by the intermediate characteristics of the flower.

LORD ROTHSCHILD, Tring Park (gr. Mr. Hill), sent a fine cut specimen of the rarely-seen *Schomburgkia* *Lyonsii*.

SIR F. WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), sent a pretty variety of *Laelio-Cattleya* *Violetta* = C. *Gaskelliana* × L. *purpurata*.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya Digbyano (C. *Mendeli* (Vetch's variety), derived from the parentage indicated by the name. The flowers are much larger than those of the typical kinds. The flowers wholly of rosy lilac excepting the yellow spot at the base of the lip. It is certainly one of the finest of the Digbyano section of hybrids. Exhibited by Messrs. J. VETCH & SONS, Ltd., King's Road, Chelsea.

AWARDS OF MERIT.

Laelio-Cattleya Robbia Mesures, var. *Ena* (L. *xanthina* × *Schofieldiana*).—The sepals and petals clear yellow, the lip white, suffused and margined with white; petals green on the basal halves, becoming suffused with purple on the margin and at the apex, the whole covered with dark brown spots; the lip deep brown, shading to green. From R. I. MEASURES, Esq., Cambridge Lodge, Floddon Road, Camberwell (gr. Mr. Chapman).

Laelio-Cattleya × *Haroldium* (*dendrosa* × *Hardyana*).—The sepals pale yellow, with slight rose markings; the petals yellow, deeply suffused with rose; the basal lip rosy-purple, shading to crimson at the base and throughout the throat. It has the intermediate characteristics of the parent species. From R. TUNSTALL, Esq., Monkholm, Brierfield, Burnley.

Cypripedium Robbia (*dellatulum* × *Rothschildianum*).—The dorsal sepal greenish-white, lined with broad bands of dark purple. The long petals greenish-white, lined and spotted with dark purple. The lip white, covered with bright rose-purple markings. From the collection of W. M. APPLETON, Esq., Tyn-y-Coed.

Cypripedium Utahi superba (*Harrisiana superba* × *Lawrencei*).—A fine, bold flower, the dorsal sepal green, suffused with deep purple in the central area, the outer halves rose-purple. Shown by R. I. MEASURES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Fruit and Vegetable Committee.

Present: G. Buryard, Esq., in the Chair; and Messrs. H. Esling, W. Farr, W. Bates, A. Dean, G. Kell, F. Q. Lane, G. Norman, J. Smith, W. Pompat, A. H. Pearson, and W. Wilks.

An extensive collection of heavy fruit was shown by Messrs. S. STONE & SONS, Bonmoss Nurseries, Middlesex. Of Plums we noted Demington's Superb, Bryantonie Gage, Pond's Seedling, Gishorn's Early Transparent, Belle de Louvaine, and Victoria. Apples were shown in baskets piled up into pyramids, with wood-work as the foundation. Very fine were the varieties *Lady Sudeley*, Worcester Pearmain, Royal Jubilee, Grenacher, Williams' Favourite, Red Quarenden, Goodenough's Nonsuch, Beauty of Bath, and Ecklinville Seedling. A few varieties of Pears were shown (Silver Knightian Medal).

A large exhibit of Early Apples, Pears, Plums, &c., was made by Messrs. J. VETCH & SONS, Ltd., Royal Exotic Nurseries, Chelsea, and the various lots were shown in pyramidal form in baskets, as in the other exhibit. All were particularly clean-looking, unblemished examples, and for this early date, of good size. The Demington's Superb Plums and Nectarine Plums were very good, as were the samples of La Constantine (red), and White Dutch Currants. There were nice specimens of Pears—Jargonelle, Beacon, and Williams' Bon Chretien. The finest baskets of Apples were Worcester Pearmain, *Lady Sudeley*, Peter the Great, Bunches' Favourite, Langley Pippin, Early Julian, Beauty of Bath, Early Strawberry, Duchess of Oldenburgh, and Irish Peach (Silver Knightian Medal).

Mr. H. W. BROWN, Esq., Penbald, Mold, Flintshire (gr. Mr. W. Taylor), showed red-fruited Tomato *Klondyke*, seemingly a prolific variety, having slightly corrugated fruit.

A seedling Apple from Mr. C. ROSS, gr. Welford Park, two varieties of Plums, one of Neclaires, two Melons, and a few Damsons, completed the list of fruits shown.

The Lecture.

At the three o'clock Meeting, at which Mr. A. H. Pearson presided, Mr. Baker read an excellent paper on the theory and practice of manuring. He urged the importance of tillage, and of the employment of suitable manures in sufficient quantities, at the proper time; dwelling on the fact that the requirements of the living plant needed more careful study than the analysis of the dead soil. This information was to be obtained by careful comparative experiment, which every gardener could carry out for himself. The necessity for the application of lime under suitable circumstances was insisted on, and the action of nitrate of potash, phosphates, and other fertilisers duly explained.

GLASGOW & WEST OF SCOTLAND HORTICULTURAL.

SHOW OF POT PLANTS AND CUT FLOWERS IN GLASGOW INTERNATIONAL EXHIBITION.

AUGUST 27, 28.—The first of the shows arranged under the joint management of the Glasgow and West of Scotland International Horticultural Society and the authorities of the Glasgow International Exhibition was opened on Wednesday last. The exhibition was one of plants and cut flowers exclusively, a fruit and vegetable exhibition having been arranged for Wednesday and Thursday in the following week.

The show just held was certainly a success, as it ought to be, considering its association with so successful an institution as the Glasgow International Exhibition has proved itself to be.

Groups of miscellaneous plants arranged for effect were very good, but it is worthy of record that the best of these was shown by a "single-handed" gardener. Readers of the *Gardener's Chronicle* will know what that means!

Then the cut flowers were glorious; the Dahlias, the Gladioli, the Roses, the Pentstemons, the hardy herbaceous species, or what are known as "border" flowers, were above praise; and they were shown in profusion. It was exceedingly evident that the Scotsman's forte is

his hardy flowers. He grows them well, and his climate and his soil make this possible. At the same time, it may be pointed out that Mr. MORFHEU, of the Rowledge Nurseries, Surrey, is proud that he has now for the first time beaten the Scots growers in Scotland in a class for Dahlias, having won that for forty-eight show and fancy varieties.

A very weak feature of the show was the section for stove and greenhouse plants. These were very inferior, and this failure is probably due to the fact that of late years Glasgow has not held the large horticultural shows it might do, therefore, specimen plants, that take years to attain an appreciable size, are not forthcoming.

The total area of the tents was 25,000 square feet, and it was well filled. Mr. Hugh M. Mackie and his committee are entitled to congratulation.

GROUPS OF PLANTS AND SPECIMENS.

The "Group" class, a feature nowadays at almost every horticultural show, was represented at Glasgow. In this case the exhibits were upon spaces of 30 feet by 10 feet, and prizes to the value of £10 were offered in this "open" class. The 1st prize was won by Mr. J. G. Gault, gr. to MOKIAS CAWSELL, Esq., Murcia House, Pollok-shields, with an exhibit of much excellence. The best plants in the group were *Codiums*, some of which ranged from 2 feet to 3 feet high, and were of grand colour, not inferior to plants exhibited in the South of England. The exhibit was provided with a background of a steep cork-covered wall of varying height, and its relation to the exhibit itself was not sufficiently close to afford the best effect. The arrangement generally was not so satisfactory as the quality of the plants shown, which included *Panacraus*, *Lilium speciosum*, *Odontoglossum*, *Palmis*, *Cordylines*, *Dendrobiums*, &c. Mr. HUGH DUNSON, Belmont Nurseries, Belfast, won the 2nd prize, and showed a group that in arrangement was commendable in design, but too heavy in execution. This exhibit had not such finely-cultivated and coloured *Codiums*, and it was probably principally due to this fact that the prizes were awarded as described above. In the centre of this group was a fine lot of varieties of *Lilium lancifolium* and *L. auratum*, and at each corner a group of tuberous-rooted *Begonias*. 3rd, Messrs. R. B. LAIRD & SONS, Ltd., Murrayfield, Edinburgh, who introduced into the groundwork a few nettles to represent water. There were nice *Codiums*, *Lilium*, and *Eupatris* in the group. There was one unsuccessful exhibitor.

A smaller class was one for a group of miscellaneous plants to be shown exclusively by gardeners and amateurs, the exhibits to be arranged on circular spaces of 10 feet each. The 1st prize of a Memorial Medal and £5, presented by the Trustees of the Vetch Memorial Fund, was won by Mr. THOS. HALL, gr. to Mr. CAMPBELL, Williamwood, Kemi-hedge; 2nd, Mr. ADAM KNIGHT, gr. to Mr. WOODIE, Millersneuk.

The principal "open" class for specimen plants called for twelve stove or greenhouse plants, not fewer than eight of which were required to be shown in bloom. The 1st prize was gained by Mr. ALEX JACK, gr. to W. CONNELL, Esq., Roselle, Partick, the individual specimens shown by whom were not of striking merit. They lacked size, and were not choice, for the inclusion of *Madame Desgraves* *Chrysanthemum* could not be said to add greatly to the value of a collection of "stove and greenhouse plants." There was a large well-flowered plant of *Vallota purpurea*, carrying seven flower-spikes with five or six blooms each. *Lilium speciosum*, several *Palmis*, a *Yucca*, and two *Begonias*, were also included. The 2nd prize went to Mr. JNO. NEIL, gr. to A. B. MURRAY, Esq., 35, Crawford Street, Partick.

The class for collection of six plants was won by Mr. J. BISHOP, gr. to A. DENTON, Esq., Craigdarroch, Cove, his plants being *Vallota purpurea*, *Statiche*, *Lilium speciosum* var. *alba*, *Sedum spectabile* of very poor colour, and two tuberous-rooted *Begonias*; 2nd, Mr. JNO. NEIL.

Ferns were shown in classes for six and for four specimens. The 1st prize for six specimens was won by Mr. JNO. O'NEIL, gr. to H. B. MURRAY, Esq., 35, Crawford Street, Partick; and the 1st prize for four specimens by Mr. LAND-BOUGH, gr. to Mrs. MUIR, Beechwood, Beuchden.

In a class for two exotic *Ferns*, Mr. MICHAEL RAE, Ferniecha, Biggar, staged large specimens of *Adiantum emarginatum* and *A. gracillimum*.

British Ferns were exhibited better than the exotic species, and the 1st prize collection for nine specimens, shown by Mr. WILLIAM BAILEY, Stewart Street, Milngavie, was praiseworthy, consisting of plants in 12-inch pots, or larger, and of the following species and varieties: *Las-trea crispata*, *Polystichum longe-*

pinna, *Athyrium coronatum*, *Scolopendrium vulgare crispum robustum*, *Polypodium Canbriacum*, *Scolopendrium vulgare crispum* var. *Miss Kilsou*, *Athyrium gemmatum*, and *Lastrea cristata "stem"*.

The best collection of four British Ferns was shown by Mr. Jno. Lyon, gr. to Ma or MOORE, Greenhill, Blandyre.

Early-flowering Chrysanthemums were allotted a class for twelve plants, but the specimens exhibited were not nearly in full flower, and therefore do not call for comment in detail.

There were some very finely grown *Cordylines* (*Dracenas*). The 1st prize for four specimens was won by Mr. Adam Knight, gr. to PETER WOODIE, Esq., Millersneek House. The varieties Lindeni, anandite, terminalis, &c., were about 4 feet high; 2nd, Mr. W. Lansborough, gr. to Mrs. MITCH, Beechwood, Bearsden. The prize in the class for six specimens was won by the same exhibitors, who won in the same order as they did in the smaller class.

Calceolus strebosus in the class reserved for them were capital. Mr. John Gault, gr. to MARGARET CARSWELL, Esq., Mirena House, Pollok-Highly, who won 1st prize for four specimens, had plants 5 and 6 feet high, of good form and colour, with leaves averaging the surface of the pots; 2nd, Mr. WILLIAM LANSBOROUGH.

Tuber plants, or plants suitable for the adornment of the dinner-table, were shown very well, and seemed to indicate that the Scottish gardeners have to make the provision of such plants a matter of the first consideration. The 1st prizes for twelve plants and for eighteen plants respectively were won by Mr. Adam Knight, gr. to PETER WOODIE, Esq., Millersneek. The plants were pretty specimens of *C. cadmeus* and *Cordylines*, with an *Aralia*, *Palm*, &c. The *Calceolus* were splendid, and the only fault that could be urged against the collection was that it lacked variety. The 2nd prize was taken by Mr. W. LANSBOROUGH, and the 3rd by Mr. A. WARD, gr. to M. ALEXANDER KASHLEY, Milliken Park. There were numerous exhibits in this class. Mr. MITCH took the 2nd prize in the class for twelve plants.

The 1st prize for six specimens was won by Mr. A. KELLOCK, Sawmill Fold, Partick, and Mr. JAS. JARVIS, Bala Beva House, West-Bridge, Falkirk, took the 2nd prize.

CUT FLOWERS.

*Dahlia*s constituted quite a feature of the cut flower section of the exhibition. The 1st prize for twelve blooms of *Cactus* varieties was won by Mr. JAS. ROBERTSON, Redcliffe, Johnston, who showed very bright blooms of fine size and quality, 2nd, Mr. J. W. TAY, ELPHIN, 7, Ardenne Street, Kilmarnock, and 3rd, Mr. B. MAINDALE, Sunshill, Cultulloch. The larger class for twenty-four blooms was won by Mr. Peter McGowan, gr. to J. COLVILLE, Esq., Arngowney, Kippen, and amongst a large number of competitors the most successful for the 2nd prize was Mr. JAS. HAITE, gr. to JAMES ABAM (?), Esq., Orchard House, Carluke, 2nd, Mr. GEO. COLE, gr. to Col. HAIRDENSON, Stuart Terrace, East Kilbride.

The show and fancy varieties were shown in extremely large blooms, and the best collection of twenty-four specimens were shown by Mr. JAS. HAITE, Mr. ROBERT SUTHERLAND, Avild Aisle, Kirkcubrick, was 2nd; and Mr. THOS. ROBERTSON, Eastwood, Thordiebuck, was 3rd.

A wonderful display was made by the class for the display of *Balbia* blooms upon a space of 10 ft. by 1 ft., there being as many as eight competitors in the class. Though some of the exhibits ran pretty closely to each other in point of merit, the 1st prize was well won by Messrs. CAMPBELL & SONS, Blandyre, who had very large flowers of the stiff show blooms, also a good selection of varieties for Pompons and *Cactus*, and very few single-flowered. It was a capital exhibit, and the arrangement effective. Apparently there is need for more white varieties among *Cactus* *Dahlia*s. Mr. S. MORIMER, Kowledge Nursery, Farnham, who was 2nd, exhibited a very representative collection; 2nd, Messrs. ALEX. LISTER & SONS, Rothiesay.

For forty-eight blooms of show and fancy *Dahlia*s, the 1st prize was won by flowers from STRAY, shown by Mr. S. MORIMER, Kowledge Nurseries, Farnham. The exhibit contained excellent blooms, and won against a large number of exhibitors, 2nd, Mr. JAS. SMELLIE, Pansy Gardens, Busby, N.B.; 3rd, Messrs. CAMPBELL & SONS, High Blandyre, N.B.

*Cactus Dahlia*s, shown in jasper vases, were very pretty; the best came from Mr. W. GOLD, nurseryman, Durlanbank, Wishaw; 2nd, Mr. JOHN SMELLIE, who however won 1st prize for forty-eight blooms of *Cactus Dahlia*s shown in boxes. This was a very large class, containing numerous exhibits, and the 2nd prize was

won by Messrs. ALEX. LISTER & SONS, Rothiesay; the 3rd, by Mr. W. GOLD, Wishaw.

Pompon *Dahlia*s in vases were best shown by Mr. W. TIESSEDER, Cardiff, and Mr. JOHN IRELAND, Bridgeend Terrace, Kilmarnock, was 2nd.

Ternell were shown in considerable quantities, and consisted of very strong flower-spikes, and large brilliantly coloured flowers. The best collection of forty-eight spikes, in not fewer than thirty-six varieties, was shown by Mr. GEO. MAHER, nurseryman, Prestwick, N.B. Some of the varieties in this collection which showed to best advantage were *Balbia* de Mirbule, *Sultana*, *Grand Vainqueur* an excellent late one, *Fornosa*, and *Thais*. The 2nd prize went to Messrs. HARKNESS & SONS, Bedale, Yorks, who also showed very fine flowers in the freshest condition possible. 3rd, Mr. J. W. CARNEGIE, gr. to M. SMITH, Esq., Rosedale, Prestwick.

The best exhibit of twenty-four spikes of *Glaboli* in the Amateurs' class was shown by Mr. J. W. CARNEGIE, and the flowers were capital, 2nd, Mr. JAS. FORSYTH, 26, Wilson Street, Alexandria, 3rd, Mr. Jas. Bishop, gr. to AICHI DUNLOP, Esq., Craigdoonock, Cove.

The only collection of twelve spikes came from Mr. ADAM BRIDSON, Tweedbank, Innerleithen.

Balbia ones were capital, the varieties having extra large flowers, and the stems were erect in habit. The best exhibit of twenty-four varieties came from Mr. JAMES ROWAT, Glasgow, while the 2nd and 3rd prizes were won by Mr. J. STEWART, Lennoxton, and Mr. ALFRED BROWN, Blandyre, respectively.

The Amateurs' class for twelve varieties was won by Miss GEMMELL, Oneyard House, Kilmanning.

Pinus *Piceas* were of good size, and generally the quality was of average merit. The best collection of twenty-four blooms came from Mr. ALEX. O'BRIAN, Campbellton, and Mr. CHAS. KAY, Gargunnoch, was 2nd. Of the other exhibitors the most successful for 2nd prize was Mr. JAMES PATR, Drumbig, Kilmory.

Orchids. There were six exhibits of collections of twelve spikes, all of which were shown in vessels of twelve to eight handfuls. Excellent flowers were shown by Mr. ALEX. O'BRIAN, Campbellton, the size of them being much larger than we see them in the south. The varieties were *Doris* of Argyle, *Duchess*, *Argyle*, *Belton*, *Nellie* (var. *Battle*), *W. P. A. Sneyth*, *Magnie*, *Corn*, *Sunshine*, *Sutton*, *J. P. E. King*, *Baldie*, and *Lark*; 2nd, Mr. ALFRED MITCHELL, jr., Craigcarrick, Campbellton; and 3rd, Mr. JAS. PATER, Drumbig, Kilmory.

Sweet Peas were shown in two classes. The best collection of twelve glasses of *Sweet Pea*s was shown by Mr. Robertson, gr. to the Earl of LINDSAY, Lomdon Castle, who showed the varieties *Gorgeous*, *Comtes*, *Cardigan*, *Grey Gordon*, *Lady M.*, *Ormsby Gore*, *Greenway*, *Grey Blue*, *Sadie*, *Burpee*, *Comtes* of Paris, *Lady Grey*, *Hamilton*, *Orchard*, *Salopian*, *Lady Mary Curzon*, and *Galypto*. The 2nd prize was won by Mr. ADAM BRYDEN, Tweedbank, Innerleithen, and these also were very good flowers. Altogether, there were seven exhibitors.

The last collection of *Sweet Pea*s, upon a space of 8 feet by 1 foot, came from Mr. COLIN MUIR, gr. to S. STRANOE, Esq., Westwood, Busby, who had very fine flowers shown in Bamboo stands and glasses of varying heights, all stood upon a white ground. Messrs. JONES & SONS, Shrewsbury, were 2nd, and Messrs. KEAR BIOS, Dumfries, 3rd.

Carnations were shown in glasses containing six blooms each, and relieved with natural foliage. The 1st prize for twelve glasses of *Carnations* or *Peonies* was won by Mr. DAVID WALKER, Kilmarnock, some of the best border varieties were contained in this exhibit, and a number of seedlings.

Messrs. M. CAMPBELL & SONS, Blandyre, made a grand display of flowers of *Carnations* and *Peonies* upon a space of 8 feet by 6 feet; they were arranged in Bamboo stands and in glasses, and a great variety of *Carnations* was included in those shown, generally, too, the quality of the flowers left nothing to be desired. 2nd, Mr. THOS. WHITEHEAD, Selkirk; and 3rd, Mr. CHAS. FREEDLAND, Luskhall.

Roses were exhibited in several classes, and were of good size and quality considering the late period of the season. The 1st prize for twenty-four blooms (namely of *H. P.* and *H. T.* varieties) was won by Mr. A. GRAY, jr. Middleton; and the 2nd by COLIN MUIR, gr. to S. H. STRANOE, Esq., Westwood, Busby. The varieties best shown included Maidme Joseph Combe, pale lemon colour, Alfred Colomb, Dupuy-Jamain, Clara Watson, Duke of Wellington, Gustave Digneaux, Crown Prince, Chas. Lefevre, &c.

But in the open classes the quality was very much better than that that already noticed. Messrs. D & W. CROFT, nurserymen, Dundee, who won 1st prize for forty-eight blooms of *H. P.* and *H. T.* varieties, showed capital blooms of surprisingly fine size, good form, and high colour. Particularly noticeable were *Chas. Lefevre*, *Ulrich Brunner*, *Victor Verdier*, *Maidme José Chateaux*, *Capt. Hayward*, *Comtes* of Carillon, *Comte Planchon*, *Horace Vermet*, and *Caroline Testout*, 2nd, Messrs. A. DICKSON & SONS, Newtownards, Ireland; 3rd, Messrs. DAVID ROBERTSON & CO., Mossend Nursery, Helensburgh.

The best collection of twenty-four blooms of *Teas* or *Noisettes* was shown by Messrs. ABAM & CRABHILL, Fernfield, Ribblesdale, Aberdeen, and they staged a very pretty exhibit of moderate-sized, fresh-looking blooms of good colour. Mrs. Ed. Maxley, Inverke, Mevha, 2nd other new varieties were included. Mr. GEORGE PERKINS, ONYOND, the excellent grower of this section of *Roses* in the South, had to take 2nd place; but by the best two other exhibitors, namely, Messrs. D & W. CROFT, Dundee, who were 3rd; and Mr. HENRI DICKSON Belfast.

The best display of *Roses*, on space of 8 ft. by 4 ft., was shown by Messrs. JAS. COCKER & SONS, Aberdeen. Messrs. CROFT, Dundee, were 2nd, and Mr. HENRI DICKSON, Belfast, and Mr. GEO. PRINCE gained no prize against the Northern in this class.

Early-Flowering P. P. The best twenty-four bunches of hardy herbaceous flowers were shown by Messrs. JAS. COCKER & SONS, Aberdeen, and they were against a number of exhibitors who staged collections of much merit, conspicuous in Messrs. COCKER'S exhibit were *Laluna speciosa*, *Paeonia*, *Calceolus grandiflorus*, &c. Early, a bright scarlet variety, *Pala*, *Le S. S. H.*, *Paeonia crancestra*, *Pala*, *Sylphide* white, *Montbrun*, *Golden Star*, *Lythrum*, *Rose Queen*, *Vermore* longer *Pala*, *Le S. S. H.*, &c. 2nd, Mr. W. W. Young, gr. to Mrs. THOMAS, HAMILTON, Craighall, Kilmarnock. Amongst other *Gallonia canadensis*, *Chelone barbata*, &c. were included in the exhibit, 3rd, Mr. W. STRONACH, Glasgow.

In this class, for twelve bunches was won by Mr. ABAM BRYDEN, Tweedbank, Innerleithen, who had fine field variety of flowers of *Telchira* *cardinalis*, *Lathyrus splendens* *alba*, *Erysimum regin.*, &c.; 2nd, Mr. LINDSAY M. KIMMOR, gr. to CAMPBELL MARRIN, Esq., Drumcree Gardens, 3rd, Mr. WILLIAM YOUNG.

The class for twelve bunches of any sorts of cut flowers from the open border was won by Mr. ABAM BRYDEN, but the selection of varieties in this competition was similar to that in the case of hardy flowers generally. Mr. COLIN MUIR was 2nd.

Spaces of 12 feet by 6 feet were devoted to collections of flowers and foliage from the open border, and the exhibits in this class were grand. The 1st prize was won by Messrs. HARKNESS & SONS, Bedale, who made a splendid show, in which *Glaboli*, *Penstemonis*, *Helianthus*, *Gallonia canadensis*, and *Bedlamium* were conspicuous; 2nd, Messrs. JAS. COCKER & SONS, Aberdeen; and 3rd, Mr. M. O'BRIENSON, Rothiesay. There were four exhibits in this class.

FLORAL DESIGNS, BOUQUETS, &c.

The principal class for cut flowers was one for floral designs (bouquets and baskets) exhibited to occupy a space of 8 feet by 6 feet. There were four exhibits, and the best of these, exhibiting most variety and greatest excellence, was adjudged to be one from Messrs. PERKINS & SONS, Coventry, the remarkable display we meet of almost every large show south of the Tweed. The principal item in this exhibit was a very large floral harp, with strings formed of *Lily* of the Valley blossoms, and the framework of choice flowers in great variety, but including very few *Orchids*. There were floral cushions, alliums, wreath crosses, &c., which, from the florist's point of view, left little to be desired. 2nd, Messrs. W. HADLEY & SONS, 369, Sichelus Hill Street, Glasgow.

A class for six bouquets and six baskets of cut flowers made a great display, there being four exhibitors. The best collection came from M. ALFRED CAMPBELL, Ltd., Boustons, 13, Gordon Street, Glasgow, and the 2nd prize was awarded to Messrs. JONES & SONS, Shrewsbury; but the 1st prizewinner led by a considerable distance, and showed some charming bouquets of *Orchids*; 2nd, Mr. John Gault, gr. to MORRIS CARSWELL, Esq., Mirena House, Pollok-Highly.

A class for two flower bouquets was won by Messrs. PERKINS & SONS, who showed bouquets composed almost exclusively of *Orchids*, *Bananas*, *Lily* of the Valley, and suitable *herb.* 2nd, Mr. M. CAMPBELL, Ltd.; and 3rd, Miss M. SMITH, 112, Ralston Row, Glasgow.

The best bouquets of *Roses* had travelled all the way

from Cardiff, and the 1st prize went to the Welsh nursery of Mr. Wm. TIESSEKER. The flowers were shown in a very fresh condition.

NON-COMPETITIVE EXHIBITS.

Messrs. ASKIN & McASKIN, 84, Mitchell Street, Glasgow, showed a collection of stove and greenhouse plants, in which we noticed good *Codiaeums*, well-grown plants of *Ficus benjamina*, *grandiflora*, *Cordylines*, early-flowering *Chrysanthemums*, Palms, &c.

Mr THOS. S. WARE, Hale Farm Nurseries, Feltham, London, exhibited a very large group of tuber-rooted Begonias in flower, the varieties and cultivation evidenced being of the firm's usual first-class quality.

Messrs. J. HILL & SON, Barronfield Nurseries, Lower Edmonton, Middlesex, exhibited an immense group of Ferns in much variety also some fine plants of *Pteridaceae* variegata, which will answer the purpose in cold houses that the old *Panicum* serves in the hot-houses.

Messrs. SMITH & SIMONS, 35 and 38, West George Street, Glasgow, exhibited a group of stove and greenhouse plants, in which Palms and Pandanus were a principal feature.

Messrs. HIGH LOW & CO., Bush Hill Park, Enfield, exhibited a group of plants made up mainly of choice *Codiaeums*, *Phytolium variegatum*, *Præcoxia Sandersonii*, *Xanthoxis Rothemannii*, *Adianta*, *Erica Marnockiana*, now less seldom seen in the south, but well worth retaining in cultivation. Also *Cattleya gigas*, *C. Leopoldi*, *C. Harrisoni*, and *Oncidium x Mantini*. The *Codiaeums* were of moderate size, but excellent colour.

A collection of Japanese dwarfed trees was shown by Lord HAMILTON, of Dalzellier, Mr. Angus, there being about two dozen specimens.

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited a group of flowers of Lilies and Gladioli in variety, giving to one of the tents quite a familiar appearance, suggestive of the Drill Hall, Westminster.

Messrs. STEART & MEIN (Laing & Mathew, Kelso, N.B.), exhibited Golden Pines, also *Etiopium radicans* variegata, *Carnations*, &c.

Messrs. BROWN BROS., U. Clington, showed *Violas* and early-flowering *Chrysanthemums*.

Mr. JOHN THOMAS, Hawick, exhibited a grand lot of Carnation blooms over 200 all on paper collars; *Dahlia*s, *Phloxes* in variety, and a batch of plants of the new Begonia *Caledonia*, and the white *Glorie de Lorraine*.

Mr. H. ECKHARD, Wem, Salop, showed a collection of about a variety of Sweet Peas.

Mr. ANOS PERRY, Windchore Hill, London, N., exhibited early flowers in which some very fine *Tritomas* were a grand feature, also choice *Water-Lilies*, &c.

Mr. CHAS. HAVINE, nurseryman, Jedburgh, N.B., showed collections of shrubby *Phloxes* and *Pentstemons*, both in great variety, and well.

To a very fine plants of *Sarracenia purpuracea* were shown by J. B. MURPHY, Esq., Redlands, Kilmarnock, Mr. Geo. Russell, and from the same garden came an excellent specimen of *Lycopodium scariosum*, but which was a little faded and showed it.

Messrs. LISTER & SONS, Bothesay, exhibited a capital collection of *Dahlia*s, *Ericas*, Sweet Peas, &c.

Messrs. HOLLIS, Ltd., Dereham, Norfolk, made a great display with *Cactus* *Dahlia*s, arranged in 144 pyramids, and in other ways, interspersed with *Asplenium* fronds.

Messrs. DOBIE & CO., Bothesay, and at Orpington, Kent, exhibited *Dahlia*s largely, and in another part of the general exhibition have a permanent stand of cut flowers, *Tritomas*, &c.

Messrs. JAS. VITCH & SONS, Ltd., Royal Exotic Nurseries, King's Road, London, S.W., exhibited a group of ornamental foliage plants, composed of very choice specimens showing excellent cultivation. The *Pteris* and *Crotons* were grand, the colours of particularly varieties being highly developed. These included *Ficus* a few one, with twisted, rather narrow leaves, and other a combination; *Prime* of *Wals*, *Princess* in *Wals*, *Mortoniensis*, *Golden King*, *Albino* (of *W.*); also *Maria* in *Nepenthes*, including the *Variegata* of *N. Mastersiana*, and *N. Dicksonii*. Ferns, including *Platycaulium Vetchii* (new), *Bovillia fibrosa* (robusta), and several varieties of *Asplenium*, &c. *Cordylines* (*laucensis* in considerable variety), including *The Queen* and *Exquisite* (all of very fine colour), *Alseodora*, *Anthurium*, many very large specimens of *Acaulium Macraeana*, *fil.*, *fil.*, *Caladium*s, including the varieties *Mrs. MacLeod* and *Mrs. Payne*; *Dahlia*s, *Ficus radicans* variegata, and some flowering specimens of Messrs. Vetch's *Leucostemum Rhodioides* (new), *laucoides*, *laucoides*,

retarded *Lily* of the *Valley* flowers, &c. The whole were arranged over a groundwork of *Eubolia japonica* variegata and *Adiantum* Ferns.

Messrs. JAS. COCKER & SONS, Aberdeen, showed a collection of hardy flowers and herbaceous and bulbous flowers in great variety.

Messrs. SKINNER, BOARD & CO., Bristol, exhibited Board's patent greenhouse (wire-tension), with plants in it; and the West of Scotland Agricultural College showed a series of pots containing vegetables and cereals, illustrating the effects produced by artificial manures on farm crops.

Awards.

The awards made to non-competitive exhibits were as follows:—

SPECIAL AWARD OF MERIT.

Messrs. JAS. VITCH & SONS, Ltd.
Messrs. HILL & SON.
Mr. T. S. WARE.
Lord Hamilton.

HIGHLY COMMENDED.

Messrs. High Low & Co.
Messrs. ASKIN & McASKIN.
Messrs. Smith & Simons.

CERTIFICATE OF MERIT.

To *Lycopodium scariosum*, from Mr. Russell.
No medals were awarded, but Diplomas (mounted) will be issued in accordance with the above scale of merit.

TAUNTON DEAN HORTICULTURAL.

AUGUST 15.—There were, as usual, seven tents for the various exhibits, and in the two largest of these, where the open class and gardeners' productions were staged, the exhibits were inconspicuously crowded, so great was the increase in the entries over those of last year. The show arrangements made by Mr. J. S. Winsor were excellent; they should be studied by some other societies, for they were perfect, and all the work of making the Awards went smoothly and expeditiously. There was, as usual, a very large attendance.

As is usual at Taunton, specimen plants made a very fine feature. Mr. JAMES CYBER was first from *Cedrus*, and took the 1st prize; Mr. WILLIAM MARSHALL, the President of the Society (Mr. Thomas, gr.), was 2nd.

In the class for specimens there was a stiff fight between Mr. W. FINCH of Coventry, and Mr. CYBER, the prizes going in the order of their names.

With eight fine foliaged plants Mr. CYBER staged magnificent Palms, and the four following *Crotons* in fine character—*Flambean*, *Angustifolius*, *Queen Victoria*, and one other. Mr. W. FINCH was 2nd.

The eight exotic Ferns, Mr. GEO. TUCKER was 1st, he had nicely developed even specimens of *Epiphyllum siphonophora*, *Chelidonium elegans*, *Adiantum Williamsii*, *A. Ledyense*, &c. Mr. H. B. BAILEY, Glastonbury W. Merritt, gr. was 2nd.

The best foliaged plant recently introduced was *Croton Bredii* (improved), from Mr. W. FINCH, but its variation from the type is scarcely perceptible. The best flowering plant recently introduced was *Begonia Chelidonia* (from Mr. J. CYBER, but somewhat disappointing as a show).

The best specimen stove plants were *Asplenium bipinnatum* (Mr. W. MARSHALL) and *Botrychium* (Coker Court variety, which appears to be identical with *R. secundatum*, from Mr. W. A. SANDFORD, Northwood S. Kelly, gr. these two being placed equal. Mr. G. TUCKER had the best specimen greenhouse plants, having a fine *Statis*. Messrs. NEAL had the best *Lycopodium*, having a good example of *Selaginella cocinea*. There were specimen Ferns, *Peltandrium*, *Begonia*, &c.

With four orchids, Mr. W. MARSHALL was 1st with equal examples of *Cattleya Leopoldi*, *C. Edwardi*, *epiphylla*, *C. Sandersoniana*, and *Cypripedium Rothschildii*. Mr. CYBER was 2nd.

Begonia in collections of eight varieties were finely shown by Messrs. W. MARSHALL and G. TUCKER, the prizes being awarded in the order of their names. There were 200 specimens of single and double zonal *Peltandrium*, *Fuchsia* in four forms in the form of *double*, *double*, *double*, and *double* were single specimens also; good *Cockscombs*, which, though rather small, were of good quality.

In the Amateur Division, which includes gentlemanly gardeners, there were also some excellent specimen plants and here the exhibits were as inconspicuously crowded as in the open class tent. With two stove and greenhouse plants Mr. W. MARSHALL was the only exhibitor, and he had 1st prize also for six orchids, Mr. W. A. SANDFORD was 2nd. Mr. H. S. BAILEY had the best four plants in flower, and also the best six exotic Ferns. Mr. W. MARSHALL was 1st with four orchids, staging in this division good examples of *Cattleya Warneri* and *egias*, *Dendrobium*, *D. Devoniana*, and *Cypripedium Rothschildii*.

*Fuchsia*s, *Begonia*s, single and double zonal *Peltandrium*, *Gloxinia*s, *Adiantum*s, *Potamois*, *Colerata*, *Catalpa*s, *Cockscombs*, &c., were all well shown.

There were two classes for groups of plants arranged for effect. In the open division Mr. W. FINCH was the only exhibitor; while Mr. W. A. SANDFORD was 1st in the Gardeners' Division.

OPEN CLASSES FOR CUT FLOWERS.

Messrs. J. TOWNSEND & SONS, Worcester, took the 1st prizes in the principal classes; Messrs. J. CARR & SONS, Frome, were equally fortunate in all the *Dahlia* classes, showing good blooms throughout. Mr. G. HEMPHREYS, Chippenham, was 1st with twelve spikes of herbaceous *Phloxes*; while Mr. A. A. WALTERS, Kensington Nurseries, Bath, won for German and French *Asters*. The Rev. J. D. PRING, North Curry, was 1st with the *Conet* type, and he had the best *Phlox Drummondii*. Mr. S. DORRIS, Wellington, won, as is usual, the 1st prize for spikes of *Gladioli*. *Carnations*, *scilla*, and *Lilies* were shown in good character by Mr. A. R. BROWN, Handsworth; stove and greenhouse cut flowers in bud bunches came from Messrs. W. MARSHALL and G. TUCKER; double and single *Begonia* were finely shown by the Rev. J. D. PRING; highly Perennials by Messrs. W. J. STOKES & SON, Trowbridge; and A. A. WALTERS, Bath; while Sweet Peas were abundantly shown in two classes, the Rev. P. W. BRANCKEN taking the 1st prizes.

A tent was set apart for floral decorations in the class for an amateur exhibitor. Messrs. E. S. COLE & SONS, Bath, were placed 1st, and Mr. J. CYBER, 2nd; both used choice orchids with excellent effect. With an *epique*, Mr. CYBER took the 1st prize. Some excellent hand bouquets were shown by Mr. COLES and Mrs. CUTL.

FRUITS AND VEGETABLES.

were generally good, and with eight dishes, Mr. J. LOCK, gr. to E. SWINNEY, Bath, K. C., Weybridge, was 1st, with excellent *Madresfield*, *Connet* and *Muscot* of *Alexandria* Grapes, *Sea Eagle* Peaches, *Early Rivers* *Nectarines*, *Plums*, *Figs*, &c. Mr. Geo. Hall, gr. to Lady ASHBURTON, Romsey, was 2nd; he had *Black Hamburgh* and *Muscot* of *Alexandria* Grapes, *Royal George* Peaches, *Pineapple*, *Nectarine*, &c. With four dishes, Mr. W. MITCHELL, Romsey, was 1st; he had *Madresfield* and *Connet* Grapes, *Sea Eagle* Peaches, *Pineapple* *Nectarines*, and *Moore Park* Apples. Mr. W. A. SANDFORD was 2nd.

Mr. MITCHELL was 1st with two bunches of *Black Hamburgh* Grapes, also with two bunches of any other black, having *Grass Marie*. Mr. LOCK came in 1st with two excellent bunches of *Muscot* of *Alexandria*; while Mr. Alderman W. H. DAVIES came 1st with any other white, having well finished bunches of *Blackland Sweetwater*; the 2nd prize going to three wonderful bunches of *Foster's* seedling from the Rev. F. STERRY. Old *Cree*, which lacked finish, though very fine in bunch and berry. *Melons*, *Nectarines*, *Apples*, *dessert* *Apples* and *Pears*, *culinary* *Apples*, *Plums*, &c., were all shown, but the pressure of the crowd was too great to admit of the details being gathered.

The open class vegetable tent, as well as that for cottagers, were filled to overflowing with exhibits of a very high order of merit. The special prizes offered by Messrs. SUTTON & SONS, Messrs. JAS. CARTER & CO., Messrs. WEBB & SONS, Messrs. DUNN & BROS., and others, contributed to a large number of exhibits. It would perhaps be difficult to show such a collection of cottagers' produce as that seen at Taunton; the soil of the district appears to suit the various vegetables, and they were seen in very fine character.

NON-COMPETITIVE EXHIBITS.

Miscellaneous collections of plants and cut flowers were furnished by Messrs. R. VITCH & SONS, Exeter; KEW & SON, Lancaster; WHITE, and BARR & SON, London; JARVIS & CO., Chard, DAVIS, Stare, &c.

SWANSEA HORTICULTURAL AND GARDENERS'.

AUGUST 17.—This Society held a very successful show in Swansea Market, and the energetic Secretary and his committee may be congratulated on the result of their efforts. The exhibits generally were of considerable merit, and the vegetables, fruit, chief classes of cut flowers, wreaths, and bouquets, together with a large collection of *Gloxinia*s, exhibited by Messrs. PARSONS & CO. of Swansea, were especially noteworthy.

GROUPS OF PLANTS.

For a group, arranged in a space of 2 ft. by 10 ft., Mr. Carpenter, gr. to Mr. R. KYLE, Llanelly, was 1st; Mr. Hughes, gr. to Mr. RICHARDS, Hill House, Sketty, 2nd.

The twelve-stove and greenhouse plants, Mr. CARPENTER won with nice, fresh-looking plants, including *Croton* *Baron A. de Rothschild*, *Kenia* *Belmoreana*, *scillanotis* *floribunda*, *Rosa* *cochina* *superba*, &c. 2nd, Mr. Hawkins, gr. to Mrs. TREVILLE, Hendre-Idolau.

The class for a collection of eight dishes was won by Mr. J. DUNN, gr., of Mill Hill, THOMAS, Swanage, and Mr. J. HAWKINS, who was 2nd, and had large quantities.

Prizes for six and eight dishes were given to Messrs. HAWKINS, gr., of Swanage, and Mr. J. DUNN, gr., of Mill Hill. Mr. J. HAWKINS, gr., of Swanage, was awarded a silver cup, valued at £20, for his collection of eight dishes, which was a most successful one. Messrs. J. DUNN, gr., of Mill Hill, and Mr. W. ALCOCK, gr., of Swanage, were 2nd and 3rd respectively.

The best exhibition of Sweet Peas was shown by Mr. A. H. BROWN, gr., of Swanage, who was 1st in the district of Swanage. He had a splendid set of four. Mr. A. H. BROWN, gr., of Swanage, was a good 2nd.

For a collection of Peas, arranged for exhibition in a space 20 ft. by 10 ft., 1st prize was a silver cup, valued at £20, given by the President of the Society, Col. W. L. MOORE. The four best exhibitors, who made an admirable display, were Mr. J. TOMES, gr., of Swanage, who was 1st; Mr. W. ALCOCK, gr., of Swanage, who was 2nd; Mr. W. ALCOCK, gr., of Swanage, who was 3rd; and Mr. J. TOMES, gr., of Swanage, who was 4th.

For a collection of Dahlias in a space 20 ft. by 10 ft., a similar cup to the above was given by the President and won by Mr. W. THREBHER, Godalming, who appears to be the most successful in this district.

In a class for a collection of Carnations, in a space 10 ft. by 10 ft., Mr. W. THREBHER, Godalming, secured a cup offered by Mr. H. S. EVANS, of Swanage, with a fine lot of blooms.

FRUIT.

The class for a collection of eight dishes was won by Mr. HAWKINS, with good Grapes, Madresfield, Court and Muscat of Alexandria, Figs, Nocturnes, Peaches, &c. Mr. MITCHELL, gr., of P. TRENTHAM, Ewington, following.

For six bunches of grapes, in three distinct varieties, Mr. MITCHELL was 1st with good Muscat of Alexandria, Boywood Muscat, and Albatros. Mr. CRAFTS, gr., of Mr. VANDER, KILDEA, North, was 1st for Black Hamburgh Grapes; and Mr. T. PILLER, gr., to Miss TAYLOR, Penrice Castle Gardens, for Muscats. There were good exhibits of Peaches, Nocturnes, and Melons.

VEGETABLES.

These were numerous and well shown. In an open class for nine varieties, Mr. PILLER was awarded the 1st prize for a grand collection, every dish being remarkably good.

TWO LABOURS.

A Silver Medal was awarded to Messrs. PARSONS & Co. for a group of Gloxinias, including 1st and 2nd variety but rarely seen with two rows of petals, and to come true from seeds.

Mr. HARRIS, Black Hill Nurseries, was awarded a Certificate of Merit for a collection of miscellaneous plants and flowers.

NATIONAL CHRYSANTHEMUM.

The executive committee met at Carr's Restaurant, Strand, on Monday evening last, after a long interval. Mr. Thomas Hill presiding, there being a good attendance of members and delegates from affiliated societies. It will be remembered that at the last annual general meeting an alternate address was voted to the late chairman of the executive committee. It was on this occasion submitted to the committee previous to presentation, and the execution of the address by Mr. W. B. Pratt, Newgate street, was greatly admired. It set forth that the presentation made by Mr. Waterer "in grateful recognition of his services to the Society as the vice-chairman of the executive committee in 1897-1898, and as chairman of the executive committee in 1898-1899." It bears the signatures of the late Sir Ed. W. Sandford, Bart., and of Mr. Richard Dean as Secretary. A small deputation was appointed from the committee to make the presentation to Mr. Waterer. A good deal of routine business was got through. A suggestion thrown out by Mr. Norman Davis that some form of memorial of the late President should be provided, was considered, and action postponed until the next meeting of the Committee. Resolutions to convey thanks to A. Tate, Esq., and Mr. Tate for their generous offers to the members to visit the gardens of Downside on the occasion of the annual outing on July 5, and for their generous hospitality; and to A. Dixon, Esq., for the privilege of visiting Checkley Court on that occasion, were passed by acclamation; and the Secretary was instructed to convey the Society's acknowledgments to the gentlemen named.

The subject of appointing a new President in succession to the late Sir E. Sandford was mentioned, and preliminary action taken. It was resolved that the annual dinner should be held as usual at the end of November, and a small committee was appointed to deal with the same and to report. Nineteen candidates for membership were duly elected, and the following societies admitted to affiliation: The Stoke Newington, Stamford Hill, and Clapton Chrysanthemum Society; the Gainsborough and District Chrysanthemum Society; and the Olveston Olds Chrysanthemum Society.

READING HORTICULTURAL.

By MR. J. T. COLEMAN, Secretary.

Mr. P. BISHOP, gardener, was the first exhibitor in the class for a collection of eight dishes. He had a splendid set of four. Mr. J. TOMES, gr., of Swanage, was a good 2nd. Mr. W. ALCOCK, gr., of Swanage, was 3rd. Mr. J. TOMES, gr., of Swanage, was 4th.

The best exhibition of Sweet Peas was shown by Mr. A. H. BROWN, gr., of Swanage, who was 1st in the district of Swanage. He had a splendid set of four. Mr. A. H. BROWN, gr., of Swanage, was a good 2nd. Mr. W. ALCOCK, gr., of Swanage, was 3rd. Mr. J. TOMES, gr., of Swanage, was 4th.

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FRUIT.

The class for a collection of eight dishes was won by Mr. HAWKINS, with good Grapes, Madresfield, Court and Muscat of Alexandria, Figs, Nocturnes, Peaches, &c. Mr. MITCHELL, gr., of P. TRENTHAM, Ewington, following.

For six bunches of grapes, in three distinct varieties, Mr. MITCHELL was 1st with good Muscat of Alexandria, Boywood Muscat, and Albatros. Mr. CRAFTS, gr., of Mr. VANDER, KILDEA, North, was 1st for Black Hamburgh Grapes; and Mr. T. PILLER, gr., to Miss TAYLOR, Penrice Castle Gardens, for Muscats. There were good exhibits of Peaches, Nocturnes, and Melons.

Mr. J. DUNN, gr., of Mill Hill, THOMAS, Swanage, and Mr. J. HAWKINS, who was 2nd, and had large quantities. Prizes for six and eight dishes were given to Messrs. HAWKINS, gr., of Swanage, and Mr. J. DUNN, gr., of Mill Hill. Mr. J. HAWKINS, gr., of Swanage, was awarded a silver cup, valued at £20, for his collection of eight dishes, which was a most successful one. Messrs. J. DUNN, gr., of Mill Hill, and Mr. W. ALCOCK, gr., of Swanage, were 2nd and 3rd respectively.

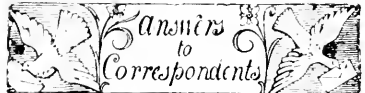
The best exhibition of Sweet Peas was shown by Mr. A. H. BROWN, gr., of Swanage, who was 1st in the district of Swanage. He had a splendid set of four. Mr. A. H. BROWN, gr., of Swanage, was a good 2nd. Mr. W. ALCOCK, gr., of Swanage, was 3rd. Mr. J. TOMES, gr., of Swanage, was 4th. For a collection of Peas, arranged for exhibition in a space 20 ft. by 10 ft., 1st prize was a silver cup, valued at £20, given by the President of the Society, Col. W. L. MOORE. The four best exhibitors, who made an admirable display, were Mr. J. TOMES, gr., of Swanage, who was 1st; Mr. W. ALCOCK, gr., of Swanage, who was 2nd; Mr. W. ALCOCK, gr., of Swanage, who was 3rd; and Mr. J. TOMES, gr., of Swanage, who was 4th. For a collection of Dahlias in a space 20 ft. by 10 ft., a similar cup to the above was given by the President and won by Mr. W. THREBHER, Godalming, who appears to be the most successful in this district. In a class for a collection of Carnations, in a space 10 ft. by 10 ft., Mr. W. THREBHER, Godalming, secured a cup offered by Mr. H. S. EVANS, of Swanage, with a fine lot of blooms.

VEGETABLES.

These were numerous and well shown. In an open class for nine varieties, Mr. PILLER was awarded the 1st prize for a grand collection, every dish being remarkably good. For six bunches of grapes, in three distinct varieties, Mr. MITCHELL was 1st with good Muscat of Alexandria, Boywood Muscat, and Albatros. Mr. CRAFTS, gr., of Mr. VANDER, KILDEA, North, was 1st for Black Hamburgh Grapes; and Mr. T. PILLER, gr., to Miss TAYLOR, Penrice Castle Gardens, for Muscats. There were good exhibits of Peaches, Nocturnes, and Melons. Mr. PILLER was 1st in the district of Swanage. He had a splendid set of four. Mr. A. H. BROWN, gr., of Swanage, was a good 2nd. Mr. W. ALCOCK, gr., of Swanage, was 3rd. Mr. J. TOMES, gr., of Swanage, was 4th. For a collection of Peas, arranged for exhibition in a space 20 ft. by 10 ft., 1st prize was a silver cup, valued at £20, given by the President of the Society, Col. W. L. MOORE. The four best exhibitors, who made an admirable display, were Mr. J. TOMES, gr., of Swanage, who was 1st; Mr. W. ALCOCK, gr., of Swanage, who was 2nd; Mr. W. ALCOCK, gr., of Swanage, who was 3rd; and Mr. J. TOMES, gr., of Swanage, who was 4th. For a collection of Dahlias in a space 20 ft. by 10 ft., a similar cup to the above was given by the President and won by Mr. W. THREBHER, Godalming, who appears to be the most successful in this district. In a class for a collection of Carnations, in a space 10 ft. by 10 ft., Mr. W. THREBHER, Godalming, secured a cup offered by Mr. H. S. EVANS, of Swanage, with a fine lot of blooms.

ENQUIRY.

RETARDING IRIS ROOTS.—Will some of our readers kindly state if it be possible to retard or freeze iris bulbs in the manner Lilies of the Valley, Spiraes, &c., have been retarded during the last few years?



APPLE: A. W. G. The insect is the grub of the Leopard Moth, Zenzera aestiva. Hook the grub down with a curved wire, or thrust a piece of cotton-wool steeped in a solution of cyanide of potassium into the hole made by the insect; but remember, you are dealing with a most powerful poison.

APPLES: King Hedley. The Apples submitted are undoubtedly infested with the grubs of the Codlin Moth—no other grub was present with them. They are about two-thirds grown, and are very probably a second brood, which, if exclusively proved, is of much economic importance, as so far the species is believed to be single-brooded in this country. You are wrong, however, in supposing the grub "has not entered from the eye of the fruit." In all the examples but one the entrance passage from the eye could be distinctly traced, and in two examples the anterior portion of the fruit was badly eaten, indicating that the grub had fed there for some considerable time. Externally, however, there was very little evidence of their presence; the characteristic pile of frass usually found in the eye of infested fruit was barely traceable in two examples. It is not unusual to find the grub infesting Pears, and they also attack stone-fruit, and have been found in Walnuts and Chestnuts. The smallness of the grubs is due to immaturity. It would be interesting to ascertain how long the grubs remain in the fruit before pupation takes place, and whether the moths from them hatch at blossoming-time or later in the

LETTUCE.

The exhibits of fruit were in general of good quality. The 1st prize for a collection of eight dishes was won by Mr. HAWKINS, gr., of Swanage, who was 2nd, and had large quantities. Prizes for six and eight dishes were given to Messrs. HAWKINS, gr., of Swanage, and Mr. J. DUNN, gr., of Mill Hill. Mr. J. HAWKINS, gr., of Swanage, was awarded a silver cup, valued at £20, for his collection of eight dishes, which was a most successful one. Messrs. J. DUNN, gr., of Mill Hill, and Mr. W. ALCOCK, gr., of Swanage, were 2nd and 3rd respectively.

year; this could be ascertained by rearing the grubs, and if you would care to send about fifty or more diseased fruit to R. Newstead, Grosvenor Museum, Chester, he would be pleased to carry out the investigation and report later through us.

BOOKS: B. W. *The Art of Budding and Grafting*, by Charles Baltet (W. Robinson, 37, Southampton Street, Covent Garden, W.C.).

FERTILISATIONS OUT OF DOORS: *Alpha*. A sandy-loam moderately enriched with well decayed stable-dung and leaf-mould, and not of less depth than 1½ ft. thrown up a few inches above the surrounding soil, unless it be on a natural slope.

ATTILEVA WARSCEWICZI (GIGAS) FAILING TO FLOWER: W. L. *Atton*. Probably your plants were kept too close (not sufficient air admitted) and too heavily shaded during the time the flower-spikes were developing. If they had been suspended near the glass of the roof the flowers would have been more likely to develop satisfactorily.

CORRECTION: Mr. John Kirk, of the Wellington Nursery, Ileanon Chapel, Stockport, was the only Kirk who exhibited in the bouquet classes at the recent Shrewsbury Show, and was awarded two 1st, two 2nd prizes, and one 3rd prize. Our report notwithstanding.

DATE SEEDS: M. A. H. File the seeds at the suture, and stratify them in Coccaut-fibre refuse, sand, or leaf-mould, in the dark in a warm house, and when they have begun to germinate, put them into pots or shallow boxes in heat of 65° to 80°. Report before the roots get entangled or pot-bound.

DECAYED PINE NEEDLES: J. Jackson. If thoroughly decayed, it is as good as any other for garden purposes. It should be screened, or passed through a half-inch mesh sieve, and sweetened by turning the heap several times before it is made use of in potting plants.

FRUIT-ROOM: T. R. Have ground for the floor, which you can coat with sand or fine gravel annually. Have double or rather hollow walls, and let the room stand 3 to 4 feet below the ground-level. Fit it with a double door 1 foot wide, and a small window at each end or in the roof for ventilation; and let there be one or two larger windows provided with wooden outer shutters, as fruit keeps plump for a longer time in a dark place than a light one, and we imagine there are fungus attacking fruits that like not the darkness. If the racks, tables, shelves, and drawers can be made of Willow, Poplar, Beech, Sycamore, or other wood not containing turpentine, all the better for the fruit. Never use hay or straw in the room—it gives a musty flavour to any fruit lying on it. Let the sharp edges of battens used for shelves be bevelled slightly. Above all, use reed or heather thatch, not slates or tiles. If thatch of this kind be employed, and it is 1½ ft. thick, no ceiling will be required. A fruit-room built in the manner described would need no heating apparatus—at least, not south of the Tweed.

ROBE ARTICHOKE: *Enquirer*. We are unable, in the absence of any information regarding the method of culture pursued, to give a reason for the plants not flowering. Are they seedlings, or are they stools of great age?

"ICE APPLE:" W. J. G. Kindly say what is intended by this term; it is unknown to us.

INSECT: J. Hughes. The insect on *Pentstemon speciosus* is the greenhouse *Orthesia* (*O. insignis*), the only coecid of the genus occurring under glass in this country. It is a comparatively recent introduction, and unfortunately a very destructive insect. You should destroy the infected plant, or so cut it down that it may be thoroughly cleaned, using either the paraffin emulsion in common use or Gishurst Compound Soap.

INSECTS ON FERNS: *Scott Elliot*. 1. The curled fronds are pseudo-galls of a species of *Cecidomyia*, commonly met with on bracken.

Collect and burn them as soon as they appear. 2. "Aphids." No. 1. A species of plant-bug. Collect them by beating the fronds over a net or farred tray. 3. "Scale insect." No. Excreta of an insect, possibly of the plant-bug. Fronds undoubtedly in an unhealthy condition. Cultivation probably wrong.

LIME FOR LAWN DRESSING: J. Jackson. Slaked stone or chalk-lime.

NAMES OF FRUITS: D. McIntyre. 1. Royal George, the fruit arrived in bad condition; 2. Emmerton's White (white) Nectarine, but the example was not in character; 3. Pitmanston Orange Nectarine.—A. W. Crismon Galande (large flowers) is probably *Grosse Mignonne*; the *Crismon Galande* (small flowers) is correctly named; and the other variety of the same name (small flowers) we cannot identify with certainty. One needs leaves and young shoots in naming these fruits.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Gurley Wilson*. Aira pulchella.—G. Coon. 1. *Vitis heterophylla variegata*; 2. *Polystichum angulare*; 3. *Davallia hirta cristata*; 4. *Pteris Ouyerdii*.—A. C. T. *Lycium sinense*, so-called Tea-tree.—J. K. *Blechnum boreale*, also called *Lomaria spicant*.—T. R. *Wantage*. *Blechnum boreale* (*Lomaria spicant*).—E. S. R. 1. *Blechnum boreale* (*Lomaria spicant*); 2. *Asplenium trichomanes*; 3. *Lastrea rigida*; 4. *Polystichum angulare*; 5. *Sedum spurius*; 6. *Sedum Telesium* var.—T. R. *Helium autumnale* var. *striatum*. *Lithospermum prostratum*.—W. H. 1. *Rudbeckia speciosa* (Neumann); 2. not recognised; 3. *Helium autumnale*; 4. *Echinops Ritro*; 5. *Eryngium alpinum*; 6. *Lythrum salicaria* var.—S. R. *Worcester*. 1. *Dactylis glomerata* var.; 2. *Tanacetum vulgare*; 3. *Arabis albidula*; 4. *Ceanothus azureus*; 5. *Pseudo-tsuga Douglasii*; 6. *Cryptomeria japonica*; 7. *Artemisia Draunculus*, *Tarragon*; 8. *Origanum vulgare*. Another time do not send more than six.—R. W. 1. *Angreum falcatum*, a Japanese species, growing well in a cool-house; 2. *Xylobium squalens*, figured in *Botanical Magazine*, t. 2955, as *Maxillaria squalens*; 3. *Catasetum viridiflavum*.—A Reader. 1. *Sedum Sieboldi*; 2. *Ophiopogon japonicus* var.; 3. *Diosma alba*; 4. *Soucheus laciniatus*; 5. *Cestrum elegans*; 6. *Achillea Millefolium*, red var.; 7. *Achillea aurea*.—M. C. *Saponaria officinalis*, Soap Wort, double-flowered variety.

OVER-WINTERING ANTIRRHINUMS THAT HAVE FLOWERED: A. W. H. In a sheltered warm spot the *Antirrhinum* is hardy enough to stand the winter in your county (Warwick), provided the land is well drained. In many parts of the south, east, and west, especially near the sea, the plant is really a perennial.

PEACH: W. J. S. Peach Mildew. Too late to do anything now; another season try dusting with sulphur.

PENZANCE SWEET BRIARS: Half-penny. My be struck from cuttings of *Alphitonia* shoots on a slight bottom heat towards the end of the summer, using small pots with one cutting in a pot. The cuttings must have a thin heel of older wood, be under 6 inches in length, have their leaves reduced in size somewhat, and not be inserted deeper than an inch. The proper sort of soil is one consisting of sifted loam ¾, leaf-soil ½, and enough sand to make it very porous. Press this firmly, and insert the cuttings with the aid of a dibber. Sprinkle the frame night and morning, give close, except for about fifteen minutes, and keep close, from 6 and 7 A.M., when the lights may be drawn off. Cuttings 8 to 9 inches long, also with a heel, may be inserted in a bed of sandy soil in a sheltered spot out of doors early in October. These should be arranged at 2 inches apart in trenches having an upright side, and 6 inches

in depth. Before putting soil into the trench, sprinkle coarse sand at the bottom. The soil should be made firm round about the cuttings. The loss will probably amount to 20 per cent. You might try present budding or winter grafting.

PICOETES: *Alpha*. The flower is a purple-edged *Picoete*. We cannot name varieties, and you should send it to a specialist or large grower.

ROSE-LEAVES: C. C., *Blackthorn Hall*. A fungus, which looks like a species of *Puccinia*. Superficially it closely resembles immature specimens of the *Rose-scale* (*Aulacaspis rosae*), but the mimicry must be accidental. Collect the leaves and burn them. Spray in early spring with Bordeaux-Mixture, R. N.

SHEEP-DROPPINGS AND SHOT FOR AN 18-GALLON CASK OF MANURE-WATER: M. J. H. Soot, a peck placed in a canvas bag, and swirled about occasionally. The bag should be hung in the cask free from the bottom. Sheep-dung, if used, should be stirred thoroughly, occasionally, and allowed to stand till it becomes clear, or at any rate less turbid. For the plants you name, 1 to 8 or 10 of water would be strong enough, and once a week is quite as often as it should be given. If the manure ferments much, this can be stopped by using a little white vitriol.

"STICK" INSECT: B. T. Unless you send the specimen we shall be unable to identify the species.

SUPERPHOSPHATE OF LIME AND SULPHATE OF AMMONIA: T. R. Good dressings of quick lime, or superphosphate, would benefit your light sandy soil by making it more compact and retentive of moisture, and be better therefore than sulphate of ammonia; besides, the sulphate is the more expensive artificial. Laves and Gilbert used the following mixed manure for pasture-land:—500 lb. potassium sulphate per acre, 100 lb. sodium sulphate per acre, 100 lb. magnesium sulphate per acre, 800 lb. ammonia salts per acre, 400 lb. sodium silicate per acre. 3½ cwt. superphosphates per acre. This manure produced 4½ cwt. of hay (first crop) per acre during the twenty-fifth session of using artificial. Griffiths, in *Treatise on Manures*. You would find this small book of much usefulness in your work. The publishers are George Bell & Sons, York Street, Covent Garden, W.C.

THIRPS IN A VINERY IN WHICH THE GRAPES ARE NEARLY RIPE: *Oakfield*. We cannot recommend anything better than XL-All, giving no stronger vaporisation than the cubical contents of the vinery demand. Afford plenty of air afterwards.

TOMATO: Vine. The so-called "sleepy disease." We fear there is no cure. Turn out the plants and burn them.

VIOLET: C. Jugs. See last week's *Gardeners' Chronicle*. The balance between the amount of food supplied and growth has been upset; then comes fungus, and completes the disaster.

COMMUNICATIONS RECEIVED.—G. D.—W. E. O.—R. D.—K. J.—W. K.—G. P.—W. E. B.—W. F.—W. P. R.—H. W.—W. M.—E. H. J.—E. C.—A.—D. R.—G. W.—C. T. D.—A. J.—W.—S. A.—D. R. S.—E. M.—G. A.—H. F.—Constant Reader.—A. L. S.—G. P.—A. W. S.—C. B.—G. D.—R. C. B.—J. H.—H. J.—R. M.—B. S.

PHOTOGRAPHS RECEIVED WITH THANKS.—G. D.—W. E. O.—W. R. C. Dundee.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

BEEN TREBLED.

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

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



DRACENA FRAGRANS VAR. *LINDENI* IN FLOWER IN THE GARDEN OF SIR HENRY BUNBURY.

THE
Gardeners' Chronicle

No. 767.—SATURDAY, SEPT. 7, 1901.

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Group of Ferns, shown by Messrs. Hill & Son at the last Temple Show	Supplementary Illustration

A MIDLAND GARDEN.

IT is an admirable testimony to the progress of good social feeling that during the last twenty years many wealthy men who delight in their magnificent gardens throw them open to the general public during certain seasons of the year. Thousands of persons of all classes take advantage of this kindly privilege, and gain from it health, enjoyment, and education. We have several such gardens around Leicester. One of them, belonging to W. H. Walker, Esq., is celebrated for its display of Rhododendrons. These splendid shrubs are arranged in a curved bank about a hundred yards long and 4 or 5 yards deep, with the back row about 10 feet high. Behind them is a belt of fine trees, chiefly well-grown Camifers in great variety. At one point the bank is broken by a small excavation, which is filled with hardy Azaleas. When all this mass is in flower, during about three weeks of June, the combination of harmonious colours and lovely forms is enchanting to the cultured eye, and makes a useful impression even on the dulllest.

These grand Rhododendrons have only been introduced during the last half century, from the Himalayas, China, Java, and various parts of North America. When I was a boy, we had nothing but Ponticum and Catawbiens. Now there are a hundred species, besides hybrids.

Mr. Walker's residence, called Birstall Holt, is a picturesque modern mansion,

built of that pleasant Elizabethan mixture of red brick and white stone, and harmonised with its surroundings by creeping Ivies, Jasmines, Roses, and Clematis, that drape the walls and windows with many-coloured blooms. It stands upon a green slope with beautiful distant prospects between the grand old trees that stud the park. With one of its present residents, now an old man like myself, I used to go botanising sixty years ago, and as we toiled homeward along the dull high road he would recite with excellent humour "The Jacklaw of Rheims," which was to me a never-failing stimulant. In a sheltered angle of this house there is a fine specimen of that handsome Chilian shrub *Buddleia globosa* nearly 20 feet high, bearing in profusion its orange-coloured balls of flowers.

It is an interesting study to watch the unfolding of the flowers of the yellow Evening Primrose, *Oenothera biennis*. They open here between 6 and 8.30 p.m. The four large yellow petals are coiled up spirally within the four long narrow lobes of the calyx, and when ready to open they endeavour to unroll themselves, thus exerting pressure upon the calyx, the lobes of which adhere slightly, and will not easily separate. Small slits open between them which gradually lengthen, and at last they give way with a slight jerk, dividing into two sections of two lobes each which rapidly with a visible motion bend backwards. The struggling petals are then free to expand, and in a few minutes the flower is wide open. Each flower lasts only about twenty-four hours, fresh ones opening each evening as the spike lengthens. The anthers discharge their pollen before the flower opens, but they do not fertilise their own pistil, as they are generally too short to reach the stigma, which moreover does not ripen or expand its four arms till several hours after the opening of the flower.

In a previous article I said that I knew of no recent book on sweet-scented flowers. The Editor named two such, and I have met with another, *Sweet-scented Flowers and Fragrant Leaves*, by D. McDonald, 1895, a catalogue of more than a thousand species, with interesting remarks upon most of them. In the *Journal of the Royal Horticultural Society for October, 1898*, there are several important papers by E. W. Burdidge on the same subject. It seems that fragrant odours are now considered to be generally healthful, cooling, and antiseptic, producing ozone and absorbing heat. It is desirable, therefore, that scented flowers and leaves should be freely used in our homes, and in all public meeting places. Scented leaves seem to be more useful than flowers for permanent odour. Their essential oils are less volatile, and their fragrance lasts longer.

I think this has not been a good season for spring-sown Lettuces; it has been too dry and hot. I sowed a mixture of Brown and White Cos the last week in April; by July 10 the White was in fair condition for use, but every plant of the Brown Cos had run to seed. The bed had been thinned, and the best of the thinnings planted out, but with the same result. I conclude that the white variety is the safer to grow, at least in a dry season. On the whole, however, the Chibbage-Lettuces have stood the dry weather better than the Cos. They have been crispier, and have shown less tendency to run.

For tying up flowering plants that require stakes I have been using short pieces of thin wire instead of string or radia, and have found them very effective. My right hand being partially paralysed, it is difficult for me to tie a knot, but by making a hook at each end of the wire I can easily pass it round, join the two hooks, and pinch them close, and I think it takes less time than tying. If the wire is passed twice round, it will hold without hooking. The wire I use is rather thicker than that which florists use for wiring short-stalked flowers.

Among half-hardy annuals, the *Zinnias* take an important position. They are handsome, varied, and very lasting, and they seem to do best in the most sunny places. Partial shade retards them considerably. They come from the sunny land of Mexico, and nothing but the brightest sunshine that England can afford them will satisfy their longing for the light. At the same time they must have plenty of water and good food, or they will be unable to weave their showiest dresses. Those who grow *Zinnias* for the first time are often disappointed with the first blooms, which come out small and poor; but they have the habit, common to many Composites, of growing after the flowers appear to be fully expanded, so that the flowers which look poor at first become in a few days of normal size and colour. On examining a number of flowers with reference to this point, I find that there is much variation. In some plants which are not Composites, the corolla grows after the flower opens, in others it does not. I am not prepared at present to say which is the rule of the majority. *F. T. Mott, F.R.C.S., Birstall Hill, Leicestershire.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

ARCTOTIS GUMBELTONI (*J. D. Hooker in Bot. Mag., September, 1901, tab. 7739b*).

THIS is one of the finest in flower of all the species of *Arctotis*. The diameter of the flower-head is quite 1 inch, and the ray flowers are of the most brilliant orange colour. There is besides a handsome ring around the disc, of dark brown-red colour, formed by a blotch nearly at the base of each ray-flower. The upper portion of the plant is well shown by the accompanying illustration (fig. 55, p. 178), but in the case of the Cambridge plant, kindly contributed by the introducer, the ring has been narrower, and with less uneven margin. It is practically seedless, flowering first without any evident stem, though afterwards producing very fine flowers from branches which bear a few leaves at the base. These branches, however, are not very persistent; they appear to be the last effort of a plant which seems scarcely perennial, and, at last, after flowering, having but slight attachment with a partially decayed stem, they readily break off, and unfortunately are not easy to strike. The plant I have has nearly exhausted itself by flowering, and my only hope of saving it rests in one small shoot which remains upon it.

This fine species has been dedicated by Sir Joseph Hooker to Mr. W. E. Gumbelton, of Belgrove, near Queensdown, Ireland, whose interest in good Composites of this and similar genera is well known. A figure is to appear in the *Botanical Magazine* this year, and I am greatly indebted to Sir Joseph Hooker for his kind information of the name which he pro-

poses to adopt; he remarks, "in tardy recognition of Mr. Gumbleton's services as a raiser and flowerer of many fine new plants."

Sir Joseph Hooker has satisfied himself on the point of novelty, and he has very kindly placed his own MS. description at my disposal. I am able, therefore, to benefit by his diagnosis, and in order to distinguish this new species from all others in cultivation, and from no doubt the great majority of species, but omitting the finer details, which would not be of general interest, it may thus be described:—

Stemless; the entire plant, with the exception of the flower-heads, clothed with their white felt of hair, notable as strongly present and permanent on the upper surface of the leaf; leaves 6 to 10 inches long, narrowed into a long petiole, pinnatifid or pinnatisect, with a large terminal lobe which is crenate or lobulate, lower lobes either wanting in upper leaves, or varying to an inch long with rounded apex, entire; peduncle stout and hollow, much longer than the leaves; flower-heads distinctly variable in size, but about 4 inches in diameter, with ray-florets $\frac{1}{2}$ inch long, and about 2 inches across the middle, of deep orange colour, with brown-red blotch near the base composed apparently of confluent lines. A native of Namsaphaland.

Some time ago I made a note that this plant must be near *A. levis* (*A. grandiflora*, Jacquin), but from that species, as described in DeCandolle's *Prodromus*, it differs in not being fruticose, and in having a decided clothing of felted hair, as well as in having, I think, no semi-amplexicaul leaf bases. From many species it differs in being quite without trace of the stiff hairs which are not uncommon in the genus; from a number it differs in not being distinctly caulescent; and among those with flowers of a yellow kind of colour, it belongs to the much more limited number which have flowers of deep orange, with a ring. In the examination of this plant I have made an interesting observation. The disc-florets, of course, are male in function, and the stigmas exist only as piston-like heads for the purpose of driving out the pollen from the anther cylinder, in order to bear it aloft, for insects to carry away.

This is quite usual, but I find, in the case of *Aretotis*, that the styles project to their fullest extent only in full sunshine, and retract when light is dull. This alone is curious, but I find, further, that when the styles are fully projected, they are acutely sensitive. The slightest touch serves to cause a sharp bending over to the side of the impact, the style immediately reversing its inclination when touched on the other side. The projection of the style appears to be due, mechanically, to its thinning out, and its retraction to the reverse process of thickening. This I thought was new, and the phenomena are, I believe, unknown to the present day physiologist; but, on looking up the descriptions of the species of *Aretotis*, I found the whole matter referred to in the Latin description of *A. aureola*, in the first volume of the *Botanical Register*. R. Irwin Lynch, *Botanic Garden, Cambridge*.

NEONICHOLSONIA, DAMMER.*

A NEW GENUS OF PALMS FROM CENTRAL AMERICA.

AMONGST a collection of Palms which I received from Central America, I found two species hitherto unknown to me, but worthy

* *Neonicholsonia*, Dammer.—Flores monoici; ♂ calyce parvo trifido; corolla 3-petala calyce plus duplo majore; staminibus 6-linea basi tantum connatis, filamentis subulatis; antheris sagittatis staminibus duplo longioribus; pistilli rudimento conico, stylis tribus ima basi connatis; ♀ immaturi ad destitutionem non suppetunt. Baccæ.

Palme aculeis foliis pinnatis; inflorescentia spicata, spatulis? floribus leviter numeris, ternis?

N. Georgii, Dammer, n. sp. Inflorescentia pedunculata, sine pedunculo ad 55 cm. longa; foliis pinnatis vagina ad 20 cm. longa, petiolo glabro quadrangulato, ad 18 cm. longo, rachidi glabra basi quadrangulata



FIG. 55.—*ARETOTIS GUMBLETONI*, Hook. f.: FLOWERS ORANGE WITH A BLACK CENTRE. (SEE P. 177.)

of cultivation, as they form stemless Palms with pinnated fronds of 4 to 6 feet in length. Fortunately I received also some good fresh seeds of one of them, from which I raised some good strong seedlings. The seedlings of *Palms* show generic characters often at an early stage, if not always, which afterwards disappear for a long time. A close study of *Palms* seedlings is therefore of the highest systematic value. The seedlings of one of these species have a character which is very striking. The first leaf is not bilid as in other species of that affinity, but bears four pinnules, two on each side of the rachis.

A closer inspection of the flowers showed that the plants belong to that little group of Central American Palms which is formed by *Asterogyne*, *Calyptrogyne*, and *Pholidostachys*. Of the latter I saw no flowers, so I was obliged to look for *Asterogyne* and *Calyptrogyne*. *Asterogyne*, Wol. (see fig. 56, A), has stamens which are united at the base into a stipitate column; the filaments are short, and bear two free half-anthers, which are united by a broad connective, which covers over the anther as a flat incurved rostellum. The first leaf of the seedling has an elongated blade, which is incised at the apex only to about one-third of its length. *Calyptrogyne*, Wol. (see fig. 56, B), has stamens, which also are united at the base into a stipitate column; but the short filaments bear a bilocellate anther of more or less sagittate form. The connective is short, more or less swollen, and does not reach the apex of the anther. The first leaf of the seedling has a blade which is cleft down near to the base.

The plants which I received from Central America have male flowers, the long stamens of which are united at the base only in a short not stipitate ring, the anthers are long, sagittate, and have a thin subulate connective, which runs out beyond the apex of the anther into a fine mucro. In the centre of the male flower is a short conical rudimentary ovary, with three styles, united somewhat at the base. The first leaf of the seedling is pinnated, with two pinnules at each side of the rachis.

I have named this new genus of Palms *Neonicholsonia*, in compliment to Mr. George Nicholson, when retiring from the curatorship of Kew. A *Nicholsonia* has been already founded by De Candolle, but which now is considered a section of *Diosmodium*.

The species, which is in cultivation, may be named *Neonicholsonia Geopipi*, Dammer. The stemless plant has leaves with the blade about 4½ feet long, the blade being 8 inches long,

the glabrous quadrangular petiole 20 inches, and the rachis, which becomes triangular at the upper part, about 27 inches long. The rachis bears on each side ten or eleven pinnules, which are lanceolate, long, acuminate, with three primary nerves, one central and two marginal, and six to eight secondary nerves. They are 12 to 16 inches long, ½ to 2 inches broad, the first pair opposite, the others alternate, 2 to 4 inches distant each from another, the terminal pair confluent only at the base, 8 inches long, 1 inch broad.

The other species, which I hope to bring into cultivation in a short time, may be named in honour of Mr. Nicholson, and his successor Mr. Watson, for several years associated with him at Kew—*Neonicholsonia Watsoni*, Dammer. This differs in its longer leaves, viz., about 6 ft. long, of which come upon the blade about 6 to 7 inches, the quadrangular petiole 33 inches,



FIG. 56.
A, *Asterogyne Martii* (Weddell), a, Male flower; b, Stamen from the side, c, Stamen showing the inner face.
B, *Calyptrogyne glabra*, d, Male flower, e, Back of the stamen; f, Stamen from the side.
C, g, Male flower, h, Androecium, i, Stamen, j, Rudiment of pistil.

and the rachis 36 inches. The pinnules, nine to ten on each side of the rachis, are elongate lanceolate, cuneate, 13 to 18 inches long, 1 to 2 inches broad, more or less opposite, 2 to 5 inches distant one from another; the terminal pair being confluent only at the base, 10 inches long, 2 inches broad.

ORCHID NOTES AND GLEANINGS.

LELIO-CATTLEYA ELEGANS VAR.

A VERY remarkable variety of this showy natural hybrid between *Laelia purpurata* and *Cattleya Leopoldi* is flowering with Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes). The variety, in the size and texture of its flowers, is the nearest to *L. purpurata* which has yet appeared. Its sepals and petals, which are white, tinged and veined with blue, closely imitating the same parts in *L. purpurata*; while the labellum, which is whitish on the tube outside, and yellow inside, has fine dark lines extending from the base to the front, exactly similar to those invariably seen in all forms of *L. purpurata*, the front lobe being purple, with a lighter area at the apex, as in *L. purpurata*. The form of the lip, with its narrow isthmus between the front

and side lobes, is of typical *L.-C.* elegance, though broader than usual. The fine plant bears a ten-flowered inflorescence.

LAELIA MONOPHYLLA.

Several pretty specimens of this neat, dwarf-growing *Laelia*, bearing showy orange-scarlet flowers, are now in bloom in Mr. H. A. Tracy's nursery, Anyand Park Road, Twickenham, where it thrives admirably in small *Orchid*-pans suspended in a cool house. The species is interesting on account of its wide difference in habit from the rest of the genus, and from the fact that it is the only *Laelia* that is not a native of the American continent. It is a native of Jamaica, where it grows on St. Andrew's Mountains at 3,500 to 5,000 feet elevation, in the region of Mosses and filmy Ferns. The earlier importations all perished through being placed in too high a temperature, Jamaica having the reputation of being a hot, moist country. Of late years the difference in temperature between low lands and mountain ranges, even in the same countries, is better understood, and consequently many species from high altitudes which used to be imported only to perish, are now grown satisfactorily in cool houses. *Laelia monophylla* makes a good companion plant to *Sophranitis grandiflora*, and it succeeds well under similar treatment. It is an evergreen species, requiring water at all seasons, but a more abundant supply when growing than when at rest.

ODONTOGLOSSUM ASPIDORHIZUM, Lelou.

In describing this elegant species in the *Gardeners' Chronicle*, September 28, 1895, its discoverer, Consul F. C. Lehmann, says:—"This is beyond any question the most floriferous *Odontoglossum* yet discovered. Not only does every pseudo-bulb produce two flower-spikes at one time, but they do so for two, and even three, years in succession, a character which, though common among *Mastdevallias*, has not been observed among *Odontoglossums*." Under cultivation the peculiarity has been well maintained, and in the few collections where the plant is found, the profusion of its elegant sprays arching all round the plant renders it highly ornamental. Several such in the gardens of T. F. Blackwell, Esq., the Cedars, Harrow Weald (gr., Mr. J. Dinsmore), are in great beauty, and form striking features in the floral arrangement in the *Orchid*-house. The individual flowers may be likened to those of *O. blandum*, but the large white crimped labellums, more or less spotted with purple, are larger than in that species. The sepals and petals are yellow, marked with purple-brown.

SCHOMBURGKIA LYONSII.

This handsome and rare *Schomburgkia* is again in flower in Lord Rothschild's gardens at Tring Park, where Mr. E. Hill, his gardener, succeeds in flowering it and other reputedly shy-flowering *Schomburgkias*, and the allied *Laelia superbiens*, regularly every year. *Schomburgkia Lyonsii* is a plant of noble habit, bearing tall flower-spikes, having on the upper portions handsome flowers, borne on stalks 2 or 3 inches in length, and having at the base of each a conspicuous bract, which falls away when the flowers mature. The flowers are white, beautifully marked with purple. The plants were imported from the hills of Jamaica, and are grown in a light intermediate-house.

Another fine *Schomburgkia*, which has been in great beauty, is *S. undulata*, "Tring Park variety," bearing dense heads of glossy dark purplish-red flowers, with undulated segments.

apicem versus triangulata, ad 6 cm. longa, pinnis utriusque 10-11, lanceolatis longeacuminatis, nervis primariis tribus, uno medio, duobus marginalibus, nervis secundariis parvis prominentibus utriusque 3-4, 30-36 cm. longis, 0.8-5 cm. latis, utrimque oppositis (an semper?) ceteris alternantibus, 5-6.5 cm. distansibus, pinnis terminalibus una basi tantum confluentibus 20 cm. longis, 3 cm. latis. Folium primum plantae juvenis utriusque pinnis binis linear lanceolatis. Habitat, America Centralis, Costa Rica.
A. Welford, *Flower*, p. 51. Inflorescentia pedunculata sine pedunculo, 10 cm. longa, vixle longiora quam species parentibus, lobis pinnatis, vagina, 6-17 cm. longa, petiolo glabro ad 85 cm. longo quadrangulari, rachidi glabro basi quadrangulato apicem versus triangulato ad 70 cm. longo, pinnis utriusque 6-10, elongato lanceolatis cuneatis, nervis primariis tribus, uno medio, duobus marginalibus, nervis secundariis parvis prominentibus 1-7, 31-36 cm. longis, 2-5 cm. latis, pinnis utrimque oppositis, cernis aliquid alternantibus 5-12 cm. distantibus, pinnis terminalibus una basi tantum confluentibus 25 cm. longis, 5 cm. latis. Floribus ♂ 6.5 mm. longis, calyce trilobo, membranae, lobis late ovatis, acuminatis, corolla 3 petala calyce plus duplo longiore, petalis lanceolatis acutis, striatis; staminibus 6 filamentis, antheris in corolla brevem comatis, subulatis, 2-5 mm. longis, antheris sagittatis, 1.5 mm. longis, dorso medio ovatis, connectivo tenui antheris adnatis superante, postilli rudimento comae styli tribus una basi comatis. Habitat, America Centralis, Costa Rica.

COLONIAL NOTES.

THE JAMAICA BANANA TRADE.

THERE are, as is well known, a great many varieties of Bananas. In the *Kea Bulletin*, 1894, pp. 229-311, an account is given of about 100 named varieties existing in various parts of the tropics. They are supposed to have had a primitive existence in tropical Asia, and to have been diffused at a period "contemporary with or even anterior to that of the human race." According to Oviedo, the edible Bananas were introduced to San Domingo, soon after the discovery of the New World, from the Canaries. It is believed they did not previously exist in any of the eastern parts of the American continent.

The Banana hitherto exported from Jamaica, and so largely consumed in the United States and Canada, is the best of the large Bananas, and is highly esteemed by Europeans throughout the West Indies. It was at first cultivated at Jamaica under the name of Martinique Banana; in Trinidad it is called Gros Michel, and in Dominica La Rose. It is now the established Banana of commerce, and over 20,000,000 bunches are annually imported into the United States, and consumed as a dessert fruit.

"There can be no question as to the Jamaica Banana being a first-class fruit. It is large, attractive in colour, and bears transport better than any other sort. When at its best—that is, gathered when fully developed and ripened slowly—it rivals "in lusciousness and delicacy the most delicious Pear." It is almost identical with the celebrated Champa and Ram Kela fruits of Bengal. It is probable that, so far, it has not reached England in the best condition. That, however, is only a question of time.

In the West Indies the Banana (*Musa sapientum*) and the Plantain (*M. sapientum*, var. *paradisica*) are closely allied, but distinct fruits. The former (or Sweet Plantain) is a dessert fruit, while the true Plantain is eaten cooked as a vegetable. In India and Ceylon both sorts are commonly known as Plantains, but they are used differently, as in the West Indies.

The Canary Banana is yielded by another species, originally from Southern China, hence called *Musa chinensis*. The plant is smaller than that yielding the Jamaica Banana, and it is often cultivated in this country under glass. The late E. W. Cooke, R.A., grow it with great success even in London. It is commonly to be seen in fruit at Kew, Syon House, and other gardens. In 1894, two plants were growing at Parkfield, near Worcester, "carrying clusters of fruit weighing between 80 and 100 lb. each." It is generally known in England as the Chinese or dwarf Banana. It is well adapted for cultivation in the Canary Islands, for it is suited to sub-tropical conditions, is easily protected from strong winds, and thrives under irrigation. It is well known in tropical countries, but is not largely cultivated in the West Indies, probably because it is not so productive on a large scale as the Jamaica Banana. It may be interesting to place on record that the introduction of the Chinese Banana from the Chatsworth gardens into the Polynesian Islands by John Williams, the Martyr of Erromanga, put a stop to the famines that previously had devastated some of these islands. The Chinese Banana was found to be much less affected by violent storms which caused considerable damage to the taller sorts.

It has been often suggested that the delicate and luscious Bananas known as "Fig Bananas"

and "Ladies' fingers" should be introduced to this country. They are undoubtedly superior to the Jamaica and Canary Bananas, but the skin is too tender to admit of their being handled for export purposes; besides, the bunches are so small that they would be acceptable only to a very small section of the community. These very choice and desirable fruits, which cannot be largely grown outside the tropics, will probably be unattainable elsewhere for some time. There would be no difficulty in growing Plantains in any quantity in Jamaica, but it is doubtful whether they would suit European taste, and there is the possible difficulty with the cook. A fruit to be eaten raw is easily dealt with, but an unknown vegetable presents difficulties that would take years to overcome. D. Morris, Imperial Commissioner of Agriculture for the West Indies, in the "Times."

WINTER SALADS.

LETUCES.—In order to furnish winter Lettuces, provision should be made some months in advance, and there must be heated pits, horse, &c. Lettuces of certain varieties are the chief ingredients of winter salads, and there is no better time than the present to sow for an early winter supply. Of course, it is now too late for obtaining large blanched heads. A note on winter salads would be incomplete if reference was not made to the useful practice of sowing Lettuce-seed in warmth at this date, and later in boxes or frames; but this can scarcely be termed a winter supply, still it may be had in time to eke out the late summer-sown or midwinter salads.

Let us take Lettuce for furnishing salad from the month of November to March, the month the most critical time of all, for if the Lettuce raised from seed sown at the present time or slightly earlier is much advanced, it will not keep if blanched, and if sown too late, unless the plants are of great strength, they will not pass through the winter safely. Give frame-protection from November. The August sowings will afford the best Lettuces if soil and situation are favourable. Late August sowings are not advisable in north-country gardens, and the sowings in that part of this island must be quite a fortnight, and in certain parts three weeks, earlier than what is deemed proper in the south. I have found it advisable to have a second supply upon which to fall back, and if a sowing be made in cold frames in August, and the thinnings pricked out when large enough, that will be sufficiently early to get a fair growth or root-hold; these plants will then turn in usefully should those in the open ground fail. The seedlings that are left in the seed-bed will afford a February or March supply. So far, we have found it useless at Syon to transplant seedlings in the open, no matter how protected, the damp being fatal to them; on the other hand, there is no great difficulty in maintaining a supply from August sowings up to Christmas; as if, say late in October, the plants are lifted with a ball of earth and the roots are intact, and planted in frames or fruit-cases free of damp, they will last till the time named. By covering with mats in the open, the larger grown plants afford Lettuces well into the month of November; and if quantities are needed, sowings should be made thinly in drills; but we have met with a fair amount of success by planting the thinnings on Celery ridges for a late autumn supply, and the plants are readily covered when frost threatens. By lifting and housing half-grown plants, affording plenty of air in favourable weather, and planting close to the glass, and keeping

a dry air, removing decaying leaves, and affording very little water, good Lettuces are obtained in winter. It is a good practice to strew dry wood-ashes on the surface as a remedy for mildew.

As regards varieties, there are differences in hardiness, and one of the best is Brown Bath Cos, with black seeds; and good Cabbage varieties are Stanstead Park, Hardy Hammer-smith, and Sutton's Intermediate, the latter a dwarf cross between the Brown Cos and a hardy Cabbage. It is never advisable to rely upon one variety, but to sow several, so that if one or more fail, there are others upon which to fall back. Sowing thinly is a most important matter, weak plants being useless for standing the winter. For sowing under glass in August and September, I prefer the Intermediate and the Cabbage types, and of these we sow large breadths in frames, thinning when ready, say, early in October. These are placed in boxes, and furnish Lettuces fit for salads as soon as the supply of lifted plants is over early in the new year, as the plants grown in boxes are afforded cultivation under glass from the start. The varieties grown in heat, seeds of which are sown in December, are Commodore Nutt and Golden Queen, and quite three months are needed for their growth, and they do well if a frame with a slight bottom-heat be afforded them. This method should not be overlooked, as the demand for Lettuce in the early spring is greater than at midwinter.

ENDIVES.

Endives are of a hardier nature than Lettuces, and more easily grown. At Syon, two varieties are grown, namely, the Green Curled and the large round-leaved Batavian. The Batavian should be grown in quantity for winter supply, it being more hardy than the other. August is a suitable time for making sowings for the latest supplies, as plants grown in rich soil, not blanched, and given ample space, are more hardy than those sown earlier, and which are blanched. For a supply from October to March, and later, sow early in July for providing Endive till Christmas, as with no lack of Lettuces, Endive should be saved till as late as possible. The Batavian winters fairly well in a sheltered warm spot in the open ground if the land be thoroughly drained. At Syon the Endive suffers greatly from the dampness of the district, so that frames are largely used to preserve it, the plants being lifted in October or November, and placed therein. I have wintered the latest-sown Batavian at the foot of a wall by covering the plants with dry tree-leaves in frosty weather, and exposing them freely in fine weather. I have made fine sloping banks against a wall, and planted Endive thereon, and by using frame-lights and mats in hard weather, the plants have passed through some very severe weather. The earlier-sown Endives will not need lifting, but merely covering so as to blanch the hearts. Flower-pots of 7 inches in diameter answering the purpose, the leaves being first tied up, and if dry leaves or long dry litter be placed between and over the pots, the Endive can be kept in a good condition for several weeks; but they must not be covered up if frozen, or when in a wet state.

CORN SALADS, &c.

Other plants useful as salads in this country are Corn Salad, not grown so much now as it deserves to be. It is very hardy, and if seed be sown in June and August thinly on well-manured land, it will give a lot of leaves for cutting (the Italian has the largest leaves). In the south, sowings made in September afford leaves in the following March.

Watercress is a valuable salad-plant, which may be grown in pots, boxes, or cold frames for winter use. I prefer to sow seeds for mid-winter supplies, pricking the young plants into boxes or cold frames. Chicory is a plant of such simple requirements that it need only be mentioned. If seed be sown in June, there will be strong roots for forcing in the winter; the Witloof is much the best variety. There are other aids for furnishing the salad-bowl. Dandelion forced is most useful, and the large-leaved French is the best; this needs much the same culture as Chicory. Sorrel and Celeriac should not be overlooked, both being useful, the former being lifted in October, planted in a cold frame, and the young growths cut as required; and the latter stored in the root-house in a bed of soil with heart leaves retained and exposed to the light, for unless it grows the roots wither or rot. Then there are Tarragon, Chives, and Mustard and Cress, *G. Wythes*.

[When are our growers going to copy their American brethren, and grow Lettuces in very large quantities under glass with the electric light? If it pays in the States it should do so here. *Ed.*]

THE AIR-ROOTS OF ORCHIDS.

The spongy covering of the roots of epiphytal Orchids is generally considered as affording a means of absorbing watery vapour. Moreover, they have been considered to have the power of condensing watery vapour, and thus supplying the plant with liquid water. M. Nabeikikh, a Russian naturalist, according to the *Revue Horticole* does not adopt this view, but considers that the spongy coat has the function of protecting the roots against the ill effects of too low a night temperature. Again, the reservoirs for air, "pneumatodes," which occur in the spongy tissue, supply the living tissues with air during the dampest portion of the year. Without the presence of these "pneumatodes," the roots would be suffocated by excess of water and deficiency of air.

Ferns require, as we see at Kew, an acre or so for the accommodation of their representative forms. With very many of these no exotic Fern can compare for delicacy of make and novelty of form; in fact, quite a number of our native types and some of the best, are altogether missing among exotic varieties, and our best plumose Lady Ferns, Shield Ferns, and frilled Hartstongues, stand unrivalled among the Ferns of the world. What then are the secretaries and organisers of our home shows about, that year after year this unique branch of horticulture is practically ignored, and little or no provision made in their schedules for the encouragement of this peculiarly British cult? In all probability the response would be disappointing at first, but a schedule defining exhibits on proper lines, i.e., instead of six or twelve British Ferns, "six or twelve plumose or crested ones, preference being given to the greater number of species," would

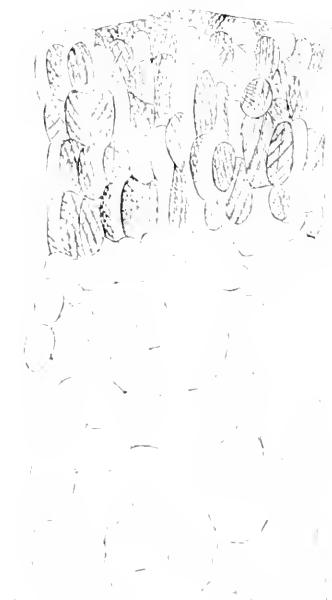


FIG. 27.—THE AIR-ROOTS OF ORCHIDS.

BRITISH FERNS AT FLOWER SHOWS.

If an audit were made of the various classes of plants scheduled for exhibition prizes at the innumerable flower shows held in Great Britain during the year, it is a lamentable fact that no class would be found to be so badly represented as British Fern varieties. As a rule, they do not figure at all, even in counties which have contributed most prizes to the Fern hunter; and when they do figure, it is in an insignificant fashion, and as we have noted on more than one occasion, is responded to in a style to fit, the exhibits often being merely huge bunch-grown specimens of little varietal merit and no novelty, and which have periodically carried off the prize year after year by virtue really of their size. No country in the world is capable of even remotely challenging Britain in this particular direction of beautiful and diverse and purely native productions. Several of our native species have varied so much and so widely that a large and beautiful collection can be formed of varieties of one species only; the writer, for instance, has forty distinct forms of our common Polypody, many of which are capable of easy culture in pans, and become magnificent feathery or tasselled specimens of great decorative value. A well-managed frame full of these is a sight for sore eyes. The same and much more, as regards diversity, may be said of the Hartstongue, a complete collection of which would fill a very large house; while the Lady Ferns, Buckler Ferns, and Shield

be a step in the right direction, always provided they were subsequently properly judged, and the award given not on the mere basis of bulk, but of proper and clean culture, and intrinsic merits of form.

The plants should also be named. At the present time British Ferns appear to be popularly appreciated only in the Midlands and the Lake District, where in many of the gardens we may see numerous varieties, and well-grown plants frequently deck the cottage windows, in which situation nothing so well repays a little care and attention as a thoroughbred form of a British Fern. Once established it will last the owner's lifetime, annually donning a new set of fronds, and only now and again requiring repotting and division, should it tend to form a crowd instead of an individual. Requiring as they do no heat in the winter, British Ferns, though worthy of posts of honour anywhere, are pre-eminently plants for folk of limited means, and in thousands of cases where unsightly, leggy Pelargoniums and similar window decorations (2) are used, the owner would get immensely more enjoyment out

of a fine frilled or tasselled Hartstongue, or feathery shield or Lady Fern, if only the horticultural powers that he would educate him or her up to the level of its acquisition. Now, however, when the prize batch of British Ferns at the local show is an eyesore, badly grown and badly chosen, a scarecrow rather than an attraction, the visitors are educated the wrong way about, and accepting these as full representatives, naturally abjure them. *Chas. T. Drury, F.L.S., V.M.H.*

LILIES AND THEIR CULTURE.

(Continued from p. 194.)

"SWAMP" or "BOG" LILIES.—A group of peaty and moisture-loving Lilies peculiar to Western America, having markedly rhizomatous bulbs, whorled leaves, and pendent flowers, which are contracted and tubular below; the apical and greater portion of whose petals are expanded widely or fully reflexed. The terms "bog" or "swamp" Lilies have been applied to them, but such terms require qualifying, as they are likely to mislead the cultivator. The plants revel in a peaty soil and an abundance of water, which must be allowed to pass away freely, or the peat will become sour and sterile, and the bulbs will speedily rot. A position somewhere near trees that would shade them most of the day is necessary for them. If no natural brook or rill exists on the banks of which a plantation of these Lilies could be made, a bed must be dug out 2 feet deep near a good water supply, and filled with spongy peat and leaves, adding a fair proportion of loose sand. If the peat is very light, such as would not hold water in suspension for more than a day or two, add some fibrous turf and mix well together, using the compost in a rough state for filling in. The bed must be drained if the subsoil is a retentive clay. The bed when finished should lie below the level of the surrounding soil to preserve it from the influence of drying winds, and to keep it cool. Plant the bulbs as soon as obtainable, for they lose much of their vitality out of the soil, having no fat scales to maintain them fresh and plump. They are best disposed in colonies at some distance from neighbouring species (some of the rhizomes travel an inch or two every year), enveloping each bulb, and charging the surrounding soil freely with sand, especially above the bulbs, for it is here that free drainage is needed, or the bulbs will rot whilst at rest in winter. Roots are emitted all over the bulb, and they travel in any direction where moisture is obtainable, and it is on this account that water should be withheld till the stem is well above ground, in order that the roots may be driven downwards in search of moisture. They are safe from summer droughts and great heat, whilst in winter they are not harmed by severe frosts. The bulbs keep safe and sound in a fairly moist medium, the roots in the wetter soil below them. This is practically the key to their successful culture, and the conditions under which many swamp plants thrive.

Lilies succeeding under these conditions are emaciated, a slender-growing plant with nodding yellow flowers, freely spotted black. A variety of this (*trubium*) has flowers coloured red externally. *L. emaciated* flowers do not expand to the fullest extent, and much of their beautifully-spotted interior is not seen from above.

L. superbum is a grand Lily, with larger, more reflexed flowers, coloured yellow or orange on the inside, the petals being heavily tipped with red; the inside of the flower is heavily spotted black. It is a tall, strong-growing Lily, of easy culture.

L. parvum, a dwarf, slender-growing Lily in the way of *canadense*, has reflexed petals flushed with reddish-orange on an orange ground colour. It is a very pretty little plant, flowering in the latter half of June. It is scarcely 18 inches in height, and bears but two flowers.

Others, such as *L. Rozzli*, which has brownish, reflexed flowers, spotted and flushed with crimson; and *L. Parryi*, which has buff-yellow flowers, more or less trumpet-shaped, and sparsely spotted with chocolate, represent the choicest of the slender-growing Lilies of this type. These two latter plants require very careful cultivation, as they are not easy to suit. Their flowers are among the most pleasing, though of small size compared with many.

L. Grayi (see fig. 21, p. 69, July 27, 1901), a plant resembling superbum in its manner of growth, but whose flowers are much less showy; and *L. pardalinum* in variety, which does well anywhere so long as it is moist enough, must close my list of Lilies requiring wet places. A new species, *L. Masseyi*, looks like a useful plant of easy culture. *Geo. B. Mallett*.

HYBRID VERONICAS.

I SEND herewith specimens in flower of new hybrid shrubby Veronicas, along with their parents, now in flower for the first time. They were raised about two years ago, and a good number are still to flower, but they appear to differ from each other in some respects. *R. Lindsay, Murrayfield, Midlothian*. [We have added within brackets some notes on the specimens sent by Mr. Lindsay, Esq.]

1. *Veronica Pioneer*.—The result of a cross between *V. Lindsayi*, itself a hybrid, figured in the *Gardeners' Chronicle*, p. 331, 1898, as seed-parent, and *V. pinelcooides*, Hook. f., as pollen-parent; the flowers of this hybrid are of a rich crimson colour, the general appearance like *V. pinelcooides*.

[Glabrescent. Leaves 15 mill.; lanceolate; broad at the base, acute at the apex, concave above. Flower-spikes 25 mill. long, stalked in the axils of the upper leaves, densely many-flowered. Bracts oblong-lanceolate. Sepals oblong-lanceolate, ciliate at the edges. Corolla white.]

2. *V. Forentiner*.—The same parentage as the former, but has light blue flowers. The habit of both plants is good, and they ought to prove quite hardy everywhere.

[Branches puberulous. Leaves somewhat compacted, sessile, spreading, 16 mill. by 12 mill., broadly oblong, rounded, sub-acute, spoon-shaped. Flower-spikes 30 mill., stalked from the axils of the upper leaves; conical. Sepals oblong, puberulous. Corolla white.]

3. *V. Ilacina*.—The result of a cross between *V. Balfouriana*, Hook. f., as seed-parent, and a species from New Zealand, whose name I do not know, as pollen-parent. This is a very pretty plant, but may be slightly tender.

[Branches spreading, puberulous, glabrescent. Leaves subsessile, 15 mill. by 6.7 mill.; oblong-acute, flat. Flower-spikes stalked, loosely panicle, many-flowered; 10 mill. long. Sepals oblong-obtuse. Corolla white.]

[*V. pinelcooides* (Hook. f.).—Shrubby young shoots, puberulous, afterwards glabrescent. Leaves decussate, sessile, spreading obovate, spoon-shaped, acute, 15 mill. by 7. Flower-spikes 13 mill. long, stalked, springing from the axils of the uppermost leaves; pyramidal, 4-sided, 4-angled, 4-tupered. Flowers white, flushed with lilac; half as long again as the bract. Sepals oblong, lanceolate, ciliate at the edges.]

[*V. Lindsayi*.—Branches scarcely puberulous. Leaves sessile, descending, oblong-rounded, spoon-shaped, 22 mill. long by 15 mill. lat. Flower-spikes 25 mill. long, stalked, arising from the axils of the upper leaves; conical, densely many-flowered, each flower half as long again as the bract. Sepals oblong, acute; corolla white, flushed with rose. Flower-buds oblong, pink-tipped.]

CULTURAL MEMORANDA.

AUTUMN PROPAGATION OF HARDY SHRUBS, &c.

THE time is at hand when the gardener may begin to put in cuttings of such plants as single and double-flowered Furzes, *Bupleurum fruticosum*, *Santolina incana*, *Chamaecyparissus* and *S. incana*, the more delicate small-leaved Ivies, the hardier New Zealand Veronicas, *Chamaepetea Casabone* and *C. diaantha*, *Hypericum* of species, *Cineraria maritima*, *Althea frutex* in many varieties, *Heris sempervirens*, *I. gibraltarica*, *I. sempervirens*, and *I. Tenoreana*, among many; *Paulownia imperialis*, ripe young wood; *Bignonia radicans*, *Lavandula* (Lavender) will all strike from cuttings inserted in clean sand, overlying fine-sifted loam and peat, under hand-lights and bell-glasses in partially shady spots.

The wood should in all cases be mature, and the cuttings removed with a heel, and be of a length of from 4 to 8 inches, according to the natural growth of the plants. They should be inserted at from 2 to 4 inches apart, with a little dibber, and abundantly watered in, and the glass tops put over them when the foliage is dry. Attention must be paid to shading during the hours when the sun strikes the glasses, but no longer. Air may be afforded once a week for 30 minutes, just to dissipate over-abundant moisture.

Usually, all the hardier subjects may remain where they are struck till April, or till growth begins, when they should be planted in nursery lines, or potted—pots being best for most of them for one or two years.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables, ante, pp. 88—91.)

(Concluded from p. 155.)

WALES.

GLAMORGANSHIRE.—The Apple and Pear-crops in the gardens here are very heavy, so much so that the trees have had to be propped to save the branches from breaking under the great weight of fruit. The trees are very free of blight, and the fruits are swelling rapidly. Apples and Pears in this district are a fair average crop. Strawberries were very good, but were soon over on account of the drought. *A. Pettigrew, Castle Gardens, Cardiff*.

Pembrokeshire.—Apples are more abundant in the valleys of this district this season than on higher ground, owing to high winds at the time of blooming. The trees were to a certain extent exhausted by a very heavy crop last year, when the orchards on the higher ground bore the heaviest crops; the valley orchards suffered then in more or less from spring frosts. We had no injurious frosts this season. Plums are a very thin crop. The trees were very much over-cropped last year. Cherries are a wonderful crop, some hedges of the wild Cherry here are a very pretty sight. There are more than the birds can keep down, and that is saying a deal. *Geo. Griffin, Slebeck Park Gardens, Pembroke*.

9. IRELAND.

GALWAY.—Owing to a hurricane that passed over this district on the last day of May, the Apples and Pears in unsheltered places suffered very much. The crop is short, and of inferior quality. Small fruits generally are a full crop and good, excepting Strawberries, that suffer very much on our limestone light soil in dry seasons like the present. *Thomas Dunne, Lough Culra Castle Gardens, Gort*.

—Apples promised exceedingly well, but the low temperature and stormy weather about the middle of May caused quantities of the fruit to drop. Young trees are carrying a heavy crop, being more sheltered. Pears did not suffer so much, as they were better set when the stormy weather came. The growths on fruit-trees in general look well for the next year, as we have had more sunshine than usual. All small fruits are heavy, and of fine quality. Strawberry Royal Sovereign gives size and weight, but lacks colour and flavour; Sensation and Guntan Park excels in all points but shape. *A. Porter, Woodlawn Gardens*.

LONDOND.—The fruit crops generally are exceedingly bad, the result, I believe, of an over-cropping last season. We had hail and frost also this season when the trees were in flower. Raspberries are good, but Strawberries were very poor. *J. Rafferty, Castle Forbes Gardens, Newtown Forbes*.

MAYO.—Apples, Plums, and Cherries were injured by winds and a slight frost early in May. Gooseberries, Currants, Strawberries, and Raspberries have borne an abundant crop. Pears, Peaches, Nectarines, in well-sheltered gardens, have done very well. *Patrick Connolly, Cranmore House Gardens, Ballinrobe*.

SLIGO.—Apples are a very poor crop, owing to late frosts in spring, and the birds were very troublesome to the buds. Small fruits are excellent. *J. E. Dawson, Lissadell Gardens*.

TYBENE.—Fruits of all kinds are plentiful. This is remarkable, as we had an exceptionally heavy crop last year. Apples would have been an enormous crop, but the hot, dry weather in May and June, combined with a rather severe attack of grub, caused many fruits to fall. *F. W. Walker, The Gardens, Slon House, Strabane*.

ATLENE.—In this garden Apples and Pears are above the average for the district, but in neighbouring gardens there are scarcely any. Our garden stands higher and drier than the others, consequently the wood is better ripened. In opposition to the above, our Strawberry crop has been much poorer than in neighbouring places. All other small fruits are plentiful. The failure of Strawberries I attribute to poor land and exhausted stock. *James Tivendale, Waterston Gardens*.

KILDARE.—The crop of Apples is far below the average, owing to the east winds. Pears are better, and Plums fairly good. *Frederick Bedford, Straffan House Gdns., Straffan Station*.

KING'S COUNTY.—The fruit crops here are good, although Apples are not nearly so heavy a crop as last year. Nuts and small fruits are abundant. *T. J. Hart, Bivv Castle Gardens, Pursonstown*.

LIMERICK.—The dull, wet, and almost sunless summer of last year partly accounts for the light crops of Apples, Pears, Plums, &c. The wood was not matured, and was killed back much during March by cold east winds. There were green leaves on the above fruit trees until well on into December. *W. A. Boates, Adare Manor Gardens*.

CHANNEL ISLANDS.

GUERNSEY.—The show of bloom was fairly good on trees that did not suffer severely from last summer's drought; but Pears generally were not very promising at the blooming time. The set was very fair, and the promise of quality is good where reasonable help by watering has been afforded. C. Smith & Son, Calvelonia Nursery, Guernsey.

JERSEY.—Apples and Pears showed abundance of blossom, which appeared to set but soon dropped, the effect, evidently, of cold east winds. All stone fruits suffered similarly. Strawberries made a brave show, but dry weather shortened both season and crop. Tomatos as a main crop out-of-doors are a leading feature here. There is scarcely a farm without a breadth of from 1,000 to 100,000 plants now showing a very promising crop, several growers now commencing to pack from the open. Markets should provide empties for very heavy shipping. H. Becker, Caesarian Nurseries, Jersey, July 22.

BOOK NOTICE.

MEMORIES OF THE MONTHS.

A NEW edition of this delightful volume has been published this year. It has been out of print for some years, but now that it is again available, it should be read by every lover of Nature who has not already made its acquaintance. Sir Herbert writes first as a sportsman and lover of animal life; secondly, perhaps, as an amateur historian; and thirdly as a keen observer of plant-life. It is in the last capacity I venture to bring him just now before the notice of the readers of the *Gardeners' Chronicle*. Referring to the extraordinary growth of the Canadian pond-weed in a certain lake, and the consequent loss of certain wild fowl, he proceeds to say:—

"The introduction of this weed (*Elodea canadensis*) into European waters is part of the romance of botany. It is said that a Cambridge professor, having received some specimens from a botanical friend in Canada, inadvertently left them in his washhand basin, whence they were emptied by an over-diligent housemaid into that bourn whence no specimen returns. A few years later, beds of a weed new to English botanists were found to have taken possession of certain reaches in the Cam, and great was the throwing up of scientific hats at this notable addition to the British flora, which received the name of *Anacharis albiustrum*. But in the fulness of time the *Anacharis* of the Cam came to be identified with the *Elodea* of Canadian lakes, and the murder was out; the sprigs thrown out of the professor's dressing-room had found a congenial home in an English river."

Sir Herbert proceeds to show that the weed soon spread from the Cam to the canal system, and threatened to bring traffic to a standstill. *Elodea canadensis*, he further explains, is a diocious plant, and there will be unpleasantness if any other professor imports its bride! The appearance of this weed in ornamental waters or reservoirs is a calamity.

Tussilago fragrans, the winter *Heliotrope*, though an exotic, is very hardy. Sir Herbert says, "Few gardeners know it or grow it; yet it is a herb of such exceeding merit that none ought to be without it. Nothing but severe frost prevents it flowering freely through the winter months, and a bunch of it scents a whole room with a perfume exactly like that of *Heliotrope*. One word of warning—plant

it not among choice things, but in a border by itself; for it spreads as quickly and is as hard to get rid of as any weed of them all. It will make itself a home on any sunny waste piece of ground, and once established it is a joy for ever. You and your children to the third and fourth generation will never cease to thank me for telling you about it." Like a true Scotchman, Sir Herbert shows his familiarity with his Bible and the Short Catechism frequently by his quotations. My experience of the winter *Heliotrope* confirms exactly what Sir Herbert says of it. I think it would do well on railway embankments; if it would make these places fragrant in winter, what a boon it would be! I frequently cut it here in Bate, where we have no railways but plenty of Nature's embankments, in December and January.

A list of rabbit-proof plants given at p. 75 should be useful to many a forester, head-gardener, and landowner. In a chapter devoted to spring flowers, reference is made to Mr. G. F. Wilson's garden at Wisley, near Weybridge, a garden in the strict sense the author says it can scarcely be termed; rather is it a *champ fleurie*—a field of flowers some 9 acres in extent, including a hillside, an Oak-wood at the foot, and a couple of level fields beyond. Here is how this chapter concludes:—

"One question must occur to everybody who visits this wilderness. How comes it, seeing there is abundant variety to choose from, that most gardens and shrubberies present such monotony in their furnishing? Here is one plant for instance, *Daphne Blagayana*, covered with ivory-white rosettes of exquisite fragrance, evergreen, shapely, and withal as hardy as a Box-bush, which one would expect to be a general favourite; yet you shall look for it in vain in nine hundred gardens out of a thousand. How many ladies who really take pains about their borders are acquainted with the lovely little ground Laurel (*Epigaea repens*), the chosen badge of Nova Scotia; or the quaint Oak-leaved Aven (*Dryas octopetala*), sheeting the banks with dark green foliage and gay white flowers? The Canadian "Pinecon" or Blood-root (*Sanguinaria canadensis*), far exceeds the Snow-drop in lustrous white, and is quite as easily naturalised; while for matchless blue consider the Himalayan [Chilian] *Tecophilaea cyanocrocea*."

Sir Herbert has a kick at the bedding-out system, which, no matter what a thousand Sir Herbert's may say, is still an indispensable and the best of all systems for many places. From bedding-out, he goes on in the same chapter to talk in a charming way of Forget-me-Nots, Pansies, School Boards, Canon Ellacombe, Saxifragas, Sweet Briars, and Daffodils. Further on, speaking of *Salvia*—the great blue *Salvia* (*Salvia patens*) he tells how for eighteen years, under the window of his bedroom, a plant has grown and flourished without the slightest protection; and then proceeds to point out just one of those things which should be pointed out to every young gardener—should be pointed out, I say, because if this is done, the said young gardener will never forget it: "This *Salvia* possesses a beautiful mechanism to secure cross-fertilisation. Insect a stem of grass, or a hair-pin between the lips of the flower, and push it gently down the throat, and you will see the long stamens moved down from the upper lobe of the corolla, so as to deposit ripe pollen on the back of the supposed insect-visitor. . . . Our bumble-bees find it very difficult to reach the honey, for they are corpulent, and the passage is narrow.

. . . But if our bumble-bees have no waists to speak of, they have brains; and they have discovered the trick of biting through the neck of the flower, opposite the honey-store, and sucking it without further trouble." Many of us knew all this before, but Sir Herbert tells it again in his own delightful way. He recommends the planting of *Stonescrops* plentifully near bee-hives, particularly the summer-flowering species, *Sedum spurium*, and concludes:—"Let anyone who desires to possess *Sedum spurium* and respectable be careful to get the bright-coloured varieties of each. All are equally hardy, grow like Chickweed, and are easily and quickly propagated by cuttings or 'pinchings'; but there are some worthless, dull-coloured varieties which should be avoided."

The volume ends with very practical instructions for planting Mistletoe berries.

I have still that young gardener in my eye, and I conclude with a quotation for his benefit from the preface of the book under consideration:—"No head is constructed to carry about an explanation of half the things noticed in the course of a single morning's walk; but if notes are made at the moment of what attracts the eye, be it a landscape, a ruin, a battle-field, a living creature, or a flower, recourse may be had at home to the information abundantly stored in books, and the significance of what seemed commonplace or trivial becomes evident at once." *William Cuthbertson, Rothsay.*

HERBACEOUS BORDER.

ZAUŠCHNERIA CALIFORNICA.

SOME sixty-two years ago a prominent horticultural writer, whose racy articles in the *Press* of the time are still worth perusal, wrote in glowing terms of two plants which had been introduced only a short time before. After speaking of the disappointments experienced by those who purchase new plants at a high figure, and often find them no better than, if as good as, older things, he ventured into the realm of prophecy, and said:—"I shall pledge my word, however, that no one who will buy the two plants that I shall name to-day will ever feel a disappointment respecting them." Unfortunately, many who have grown both will only know too well that Mr. Beaton was too optimistic when he wrote these words, at least, so far as outdoor culture is concerned, as the plants were *Ceratostigma plumbaginoides*, then known as *Plumbago Larpentei*, and *Zauschneria californica*. There are many who cannot induce the former to open its flower-buds before the frost comes to prevent them from expanding, and there are a good number who think they have a good right to make a similar complaint of the brilliant *Zauschneria californica* on similar grounds.

For several years I had a depressing experience with the *Zauschneria*, although I could flower the *Ceratostigma*; but a few years ago one discovered that there are really two plants in cultivation, both passing often under the same name, but quite unlike each other in their time of blooming and their usefulness as garden flowers. It seemed strange to read the warm eulogies of the plant by Beaton, and to hear now and again from others of their success with it, while one had to strive vainly to persuade it to flower, instead of seeing the bright scarlet blossoms of which one read and heard with envy, for such a plant is to be prized when the autumn days come in, and the garden grows dull so far as its rockeries are concerned. But the mystery was solved by comparing notes with others, so that one learned that there were "two *Richmonds* in

the field," and that the one was as satisfactory in its flowering properties as the other was the reverse. That one plant flowers here in July, and that the other will not bloom at all, though I have tried it in the warmest positions, is a fact beyond cavil; and thus that the one is of great service here while the other is valueless.

There is a considerable difference in the appearance of these plants under whatever names we may find them, and it must be said that the plant-dealers are rather erratic in this respect. I have received the free-flowering form as *Z. mexicana*, as well as *Z. californica*, but I take it that it is the typical *Z. californica*, and that the late-blooming *Zauschneria* is that called in Nicholson's *Dictionary of Gardening* *Z. c. latifolia*. At least, the characters answer to the descriptions in that excellent work. The leaves of the latter are distinctly broader and much more caespitose than those of the free-flowering form. When one sees a plant of the latter in bloom, one can well understand why that good plantsman of the forties praised it so much with its *Fuchsia-like* flowers, but with the mouth of the tubes turned up instead of down. It is, I think, slightly less hardy than the other form, but if grown in dry soil between the stones of a sunny rocky or between those of an old wall, it is quite hardy enough for our winters. So good a garden flower is welcome, especially in a dry season when other plants suffer, but this "Humming-bird's Trumpet" remains unscathed. *S. Arnott, Cursethorn by Dumfries, N.B.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

The Cool Intermediate-house.—The *Cypripediums* belonging to the cool section, which includes such fine species as *C. Charlesworthii*, as also the varieties of *C. insigne* which have appeared among the importations of the past few years, which flower earlier than the typical species, are commencing to push up their flower-scapes, and they will need every encouragement to induce them to flower satisfactorily. In the case of *C. Charlesworthii*, which will soon be expanding its flowers, I find it the plants are removed to a slightly warmer house a few days before the flowers expand, the latter come considerably larger than when they are allowed to expand in a cooler temperature, but they lose in intensity of colour under the warmer conditions. Some of the hybrids of this section will also be coming into flower, and the flower-scapes and younger growths should be closely observed daily, as the falling tree-leaves and high winds convey thrips through the ventilators on to the plants. I make it a practice to fumigate the houses at regular intervals, which certainly checks this pest.

Vanda Sanderiana.—It is a pity that one rarely meets with this grand species grown to perfection; indeed, many cultivators fail to keep it alive for any length of time. I find it does best when planted in suspended baskets, for whenever I have tried to grow the plant in a pot or in a basket on the stage, it has not been satisfactory. The plants at Cambridge Lodge formed, in some cases, part of the collection before I took charge of it. These grow in a satisfactory manner when planted in baskets. The plant will be showing its flower-spikes in most collections, and should be making roots freely. As the young tender buds of the flowers as well as the new roots offer particularly attractive baits to cockroaches, it is necessary for the welfare of the plants and to preserve the flowers, to place the plants out of the reach of these marauders. It is rarely that I experience trouble from this cause with

suspended plants. *Vanda Sanderiana* requires much heat and plenty of moisture at the roots and humidity in the air at this season; but after the plant has passed out of flower and the points of the roots are sealed over, little moisture at the roots is required, only as much as will keep the foliage plump during the winter months.

Seedling Cattleyas of one year's growth or upwards that may need to have potting compost afforded, may now receive attention, for the new growths on most of them will be at this date maturing, and roots arising from the base. This being so, great care is needed, for the least touch is sufficient to bruise and destroy the roots at this stage; but with careful handling the roots soon seize upon the compost, becoming re-established with but little apparent check. The size of the pots used will, of course, depend upon the strength of the plants, and it is never advisable to over-pot small seedling *Cattleyas*, it being then a difficult matter to ascertain in the winter season the condition of the materials as regards moisture. Allow the pots abundance of clean drainage materials, and avoid pressing the potting compost too firmly into the pots, but retain this as far as may be possible in a porous condition, with which intent a liberal sprinkling of rough sand or finely-broken crocks is of use. The smaller seedlings of the summer sowing that have become large enough to be successfully removed, may be transferred to small pots. It is desirable that each plant should be established separately as soon as possible, being then more easily cared for. Apply water thoroughly as soon as repotting has been done, keep the temperature slightly closer, and avoid direct sunshine until they have become established.

THE HARDY FRUIT GARDEN.

By C. HERRING.

Peaches and Nectarines.—The trees of the early-fruited varieties will have been cleared of fruit, and they should have the shoots that have borne fruits, where not required for extension, removed forthwith, together with other surplus shoots. Those of the present season's growth should then be laid in thin. By clearing away these old fruiting-growths early, the remaining ones obtain more sunlight, ripen well, and develop strong fruit and wood-buds. The trees should be afforded an occasional syringing in dry weather, and the borders clear water, sufficient in quantity to thoroughly moisten the soil down to the lowermost roots. Should there be traces of red-spider on the foliage, one or more applications of an insecticide should be made, thoroughly wetting both sides of the leaves, and afterwards a daily syringing with clear water until it is thoroughly cleansed of the pest. The past dry, hot weather has been very favourable to the increase of red-spider, especially when it has been accompanied by a scarcity of water.

Gathering the Fruits.—The mid-season varieties are now ripening fast, and maturing and ripening fruits that part easily from the shoots should be gathered and placed on wadding on the shelves of the fruit-room. With a very little practice, those fruits that are ready for gathering may be easily selected without any squeezing of the fruits, for great care must be taken not to bruise them. A shallow box, with a sheet of wadding and a sheet of soft paper in the bottom, should be taken to the trees in which to place the fruits, which is a better way than fixing up netting to catch the fruits; moreover, the flavour is usually superior to that of fruit allowed to fully ripen and drop off the tree, particularly *Peaches*.

Apples and Pears.—The protection of choice fruits is absolutely necessary in most country districts, blackbirds, thrushes, and the small tits being very troublesome among Apples and Pears, especially the latter. The small tits makes holes in the fruits near the stalk, and one bird will spoil many fruits in a day. Bags made of thin, stiff canvas are the best protectors, and

may be bought at a cheap rate, in quantity, of the sundriesmen. If the string is fixed to the branch, the fruit (should it part from the shoot) will be caught in the bag, and not drop with it to the ground. Round pieces of cardboard with a small hole in the centre, and from this a slit to the edge, will enable it to be slipped over the stalks of Pears and Apples, and prevent the birds pecking that part near the stalk which is usually the part damaged. If the cards are not stiff enough to keep in position, a pin will fix the edges together securely.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PACEK, Esq., Prestwood Hall, Loughborough.

The Store.—The growth of specimen plants of *Codibeus*, *Bougainvilleas*, *Clerodendrons*, and the earlier *Allamandas*, &c., will be nearly over, and the flowering season at an end, and the gardener's endeavour should now be to bring about the ripening of the wood without injuring the plants. Much less shading will now be required, and by rearranging the plants, especially the hard-wooded ones, the growths will get properly matured. Manure in any form will not be required now, and water should be gradually lessened in quantity, but not withheld as yet, or it may cause the plants to flag. Syringe the plants twice a day, and damp the paths and stages at noon in bright weather. Pot on young plants of *Codibeus*, *Draecena*, *Aralia*, and *Dicoubaehia*, placing them in small span-roofed houses, and affording them abundance of light and a humid air. During the month and in October, propagate *Codibeus*, selecting the most highly coloured or most characteristic shoots from such plants as have become unsightly; insert them singly in thumbs and 60's, and place these in the propagating pit. Such small stock may be kept in the small pots in which they have been struck till the new year. They are of use during the winter in decorative work. Propagate *Oplismenus Burmanni*, *Fittonias*, *Lycopodiums*, *Pellionias*, *Colens*, &c.

Polargoniums.—Shake out and repot into smaller sized pots the earlier show *Polargoniums*, success depending upon an early and sturdy autumn growth being secured. Place the plants in a frame, and syringe them twice a day, affording water very sparingly at the root till growth has become pronounced. Later plants, when the shoots are well ripened, which is known by the wood becoming brown, should have the shoots pruned back to two or three buds, and be laid on their side and syringed. Pot rooted cuttings singly, and place them on a shelf or close frame for the time being. Propagate *Zonalas* to furnish plants for flowering in the spring months.

Fuchsias propagated at this season are much to be preferred to those struck in the spring. A good number should be forthwith made and inserted, and placed in a close, cool frame, where they will soon form roots.

Cinerarias and Calceolarias.—The more forward plants of *Cineraria stellata* should now be put into large 32's, in which they may flower. The right sort of compost will consist of loam two-thirds, leaf-soil and dry cow-manure one-third each, with a small quantity of steamed bone-meal and sand added. Let the plants stand on a bed of coal-ashes in a frame facing north. Syringe them often, and remove the lights at night. Pot off successions of the florist's *type* now standing in pans, using for these a less rich compost. Afford cold frame cultivation, and rear them hawily, or the leaves will become soft and flabby, and unable to endure the drier air of a house later on. Syringe the foliage occasionally with Calver's Carbolic soft soap, used at the rate of 1 oz. to 1 gallon of water, as a preventative of the ravages of the leaf-miner fly. Prick off *Calceolaria* seedlings, and put the more forward plants into thumbs, and treat similarly to the *Cineraria*.

Crassula coccinea (Kalanthes).—Cut back those shoots which have borne flowers, and

induce a new break by frequent syringing; and when new growths are about an inch long, repeat, and grow-on in the greenhouse.

THE FLOWER GARDEN.

By T. H. STADE, Gardener to Lord Poltmore, Poltmore Park, Exeter.

Budded Roses.—Standard Briars recently budded should be examined, and if the ligatures are too tight to allow of the wood swelling, strip off these and apply fresh ones. If the bud is growing freely, cut the shoot half way through above the bud, or give it a sharp bend, in order to divert the sap to the bud; but if there is no sign of growth in the bud, let well alone. If the soil is very dry, apply water, and in dry weather syringe the budded stock once daily.

Violas.—If the plants which flowered in early summer were cut over afterwards, there will now be plenty of young shoots fit for making cuttings, and many of these shoots will have formed roots. These rooted shoots may be detached from the mother plants with all their roots intact, and planted in a half shady place, and in such fashion that some solid frames can be placed over them; make the bottom firm, and on it place an inch-thick layer of spent Mushroom-bed dung, or similar materials, and above it another of 2 or 3 inches in thickness, consisting of sandy soil. In this insert the cuttings at 1 inches apart; keep the frame close and moist more or less, in proportion to the quantity of roots that the young shoots may have, and in about five weeks the plants will be fit for planting out in beds or rows. If Violas are much employed, there should be two batches of plants, the one to succeed the other. Fancies may be propagated in the same manner.

Anemones may be planted during the present month in beds or on vacant spaces in the borders of herbaceous perennials, which they will help to brighten in the spring. Prepare the ground by throwing out the soil 1 foot deep, and placing manure at the bottom; then put new soil to the depth of 1 to 6 inches over it, and plant the tubers so that they will be about 3 inches below the surface. When planting for cutting purposes, plant in beds or on small borders, at a distance of 6 inches apart, in soil which is in fairly good condition.

Fritillarias—*Crown Imperials*.—Of the several species, some are excellent for planting in shrubberies, and as margins to beds of shrubs. They are more curious than beautiful. Among the *Crown Imperials*, *Aurora*, *rubra maxima*, *lutea* are the best. *F. meleagris* (Snake's Head *Fritillary*) and its varieties are suitable for naturalising in grass, and being not particular as to soil, they may be grown where other kinds of bulbs would prove unsatisfactory. When planted on turf, it should be where no mowing is done until the flowering period is past. The next few weeks will be a suitable time for planting these bulbs.

Hedges.—The trimming of evergreen and deciduous hedges should now be finished, especially the latter, or they will present a stubby appearance throughout the autumn. Evergreen shrubs may now be propagated by planting cuttings in small trenches, placing the cuttings with or without a heel against the upright side of it, the cutting resting firmly on the bottom, then fill in and tread firmly.

Belladonna Lily (*Amaryllis belladonna*). The decayed leaves and the weeds growing among them should be removed, for the flower-spikes will soon begin to push forth, and though these present a somewhat naked appearance without leaves, they are pretty and useful flowers; there is sometimes an objection to their scent, but if it be not inhaled too closely, it is not overpowering. To flower them successfully, the bulbs should be planted in a warm, sunny place, in a well-drained soil of fair depth. Plant the bulbs singly and in rows, or plant several together in clumps. There has been a lively demand for flowering bulbs in the last two years, a sign that owners of gardens appreciate the plant.

Cleodendron trichotomum is a striking looking shrub, with flowers which in colour somewhat resemble those of *C. Balfourianum*. These are very sweet-scented, but the leaves when rubbed give off an unpleasant odour.

Penstemon.—The great improvement effected in recent years among *Penstemon*s almost does away with the need of growing named varieties for general purposes, neither does it appear necessary to treat those raised from seed as one would the perennial species. Sow early in the year, and at the present time the plants will be well in flower, and continue to produce flower, till late in the autumn they get nipped by frost. Seedlings produce massive spikes of bloom, and exhibit great diversity of colour, scarcely two being alike. They are useful for planting thinly among dwarfier plants, or for forming masses in beds or borders. I sow the seeds in mild heat, and as soon as the plants appear above the soil, they are transferred to a cold frame.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROUTE, Bacton, East Angles, Devonshire.

Carrots.—Thin the Carrots sown in the month of July to a distance of 3 inches apart, then ply the hoe between the rows. Carrots of the February or March sowings, if still in the ground, should be lifted and stored, and the ground otherwise made use of.

Turnips.—The last sown Turnips will now be ready for the first thinning, i.e., to 3 inches apart. Now that heavy dews and cooler nights are with us, Turnips are growing faster, and neither aphid nor flea will give much trouble, although an application of wood-ashes will certainly accelerate growth. Hoe the land so long as it is not covered with the tops.

Celery. I never saw Celery looking better than this year, and I also hear good accounts from gardeners around here. The plants appear to have escaped the leaf-miner in a marked degree. Earthing-up should be carried on piece-meal, as previously advised, making quite sure beforehand that the roots are in a proper condition as regards moisture, though the tops must be quite dry, or decay will soon set in. The earliest rows may be finally banked up if Celery is required early in October. It will be noted that I have not advocated the use of manure-water in any form for Celery, believing the use of such to be the cause of many a good crop of Celery rotting away during the winter. Should the plants seem to need any extra assistance, I prefer to scatter a safe quantity of artificial manure between them occasionally, and apply water soon afterwards. I find the so-called Ichthemic gaino to be followed by good results. The latest planted Celery should be allowed to grow without any mounding up.

Beans & Sprouts. If the plants lack vigour, and sprouts are expected to be ready about the end of the present month, well saturate the ground between the plants with manure-water of moderate strength at intervals of ten days; or, should showery weather prevail, a light application of nitrate of soda will quicken the growth, but the nitrate must be kept clear of the foliage and stems.

Mushrooms. Collect and prepare manure for making beds, and as the spawn runs well at this season, a bed should be made and spawned every three weeks under cover. About a week is necessary to get manure into a proper state for making a bed. The materials should not be too wet, nor too dry; the heap should be turned and mixed on alternate days, and two wheelbarrowsful of loam should be added to every six of manure, and when making the bed let it be made firmly. Spawn the bed when its temperature is 80 to 85, and declining, and in three days cover with finely-sifted loamy soil to the depth of 1 inch, and beat it regularly and evenly with the back of a spade. The lumps of spawn should be about the size of a hen's egg, and be put 2 inches deep and 9 inches apart.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Melons.—The weather in Scotland has been favourable for Melons, and good crops have been the rule in most places. Those planted out on ridges or beds of soil still require to have water applied very carefully, and none of the plants should get dust-dry at the roots. The discontinuance of fire-heat at this season is often fatal to the plants, and a brisk heat should be afforded from the first to the last, for the roots will perish in a cold or wet soil, as also in a very dry one, flagging occurring on the first bright day. Let the soil be kept in a uniformly moist state, and maintain a temperature at night of not less than 70, increasing the day temperature by 5, without, and 10, with sunshine. If the fruits crack, keep the soil and the air somewhat drier. Melons in pits and frames without fire-heat very often ripen badly. Those still in good condition and with crops still green upon them should have very little water applied at the roots, enough moisture being obtained by them from the heating material. The bottom-heat may be freshened up with linings of prepared stable-manure. Leave a small amount of ventilation at the back of the lights at night, keep the fruits raised above the soil at the least 6 inches, cut fruits which it is desired to keep for a time with a portion of the stem attached, and place in a dry, airy room, or if wanted quickly, in a warm house in the full sun; but the fruits should not be cut from the plants till of full size, and developed in every respect.

Cucumbers. Give attention to autumn-fruiting plants, affording tepid liquid-manure in abundance, removing superfluous growths, and stopping the shoots at short intervals of time, not allowing the fruits to hang on the plants after they become of a usable size. Maintain a genial atmosphere by damping all bare surfaces in the morning, afternoon, and evening, but not wetting the plants, excepting in the afternoon when the day has been bright. Let no more foliage be retained than can have full exposure to light; earth up just covering the plants advance in growth, only just covering them each time they show at the sides of the hillocks or ridges, the soil being placed in the house some time previously to get warmed. The water used should be of the same temperature as the air of the house. If strong plants are now ready for putting either in fruiting pots or on to ridges, the sooner they are planted now the better for them, for but one allow them to become much pot-bound and stunted, and no sort of treatment afterwards will be of much use. It is important that an early start be made, so that the plants may be of large size before they are allowed to bear fruits, as it is certain they will make but slow progress afterwards. Half-balls of decaying manure are scarcely to be recommended for winter Cucumbers, as they are apt to become merely masses of decaying vegetable matter, and unsuited to the needs of the plants. The winter Cucumber-plant should consist of coarse and light compost, chiefly of light turfy loam in large lumps, with some charcoal added. If the soil is heavy and close, leaf-soil may be added. They succeed well in large pots, but spare and loose brick pits formed, say, on a slate staging over hot-water pipes are less troublesome, and the plants do well in them. A great mass of compost is not needed at the outset, frequent small additions of lumps of turf serve to feed the roots that come to the surface. See that the balls of soil are in a moist state, and the new compost is quite warm at planting time. Cucumbers do not require large quantities of water during the winter, still they must not be allowed to become dry at the root. Train each plant to a clear stem till the trellis is reached. The night temperature should range from 60 to 70, the latter figure being reached when the weather outside is comparatively warm. Very little air is needed, and the syringing should not be heavy or frequent in dull, cool weather.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

EXHIBITIONS

WEDNESDAY, SEPT. 11. { Royal Caledonian Horticultural Society, Waverley Market, Edinburgh (2 days).
Arundel and Littlehampton Agricultural, in Arundel Castle grounds.

MEETINGS

SATURDAY, SEPT. 7. { Société Française d'Horticulture, Paris, London.

MONDAY, SEPT. 9. { United Horticultural Benefit & Provident Society Committee.

TUESDAY, SEPT. 10. { Royal Horticultural Society, at 11 o'clock, at a Drill Hall, Buckingham Gate, Westminster.

SALES.

MONDAY, SEPT. 9. Sixteenth Annual Trade Sale of Pot Plants at Dymond's Nursery, Upper Edmonton, by order of Mr. H. B. May, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs at Protheroe & Morris' Rooms, at 11 o'clock. Dutch Bulbs at Pollexfen & Co.'s Rooms, 45, Pilgrim Street, E.C.

TUESDAY, SEPT. 10. Annual Trade Sale of winter blooming Heaths at Burnt Ash Road Nurseries, Lee, by order of Messrs. F. Miller & Son, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs at Protheroe & Morris' Rooms, at 11 o'clock. Dutch Bulbs at Pollexfen & Co.'s Rooms, 45, Pilgrim St., E.C.

WEDNESDAY, SEPT. 11. 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 o'clock. Dutch Bulbs, Lilium, Helleborus, Juglans, &c., at Protheroe & Morris' Rooms, at 11 o'clock. Dutch Bulbs at Pollexfen & Co.'s Rooms, 45, Pilgrim Street, E.C.

THURSDAY, SEPT. 12. Thirty-third Annual Trade Sale of Stove and Greenhouse Plants, &c., at the Brimsdown Nurseries, Green Street, Enfield Highway, by order of Mr. E. H. Thompson, Jun., by Protheroe & Morris, at 11 o'clock. Twentieth Annual Trade Sale of winter blooming Heaths at Longlands Nursery, Sidcup, N.E., by order of Messrs. Gregory & Evans, by Protheroe & Morris, at 11 o'clock. Dutch Bulbs at Protheroe & Morris' Rooms, at 11 o'clock. Palmus, Bays, Bulbs, &c., at Pollexfen & Co.'s Rooms, 45, Pilgrim Street, E.C.

FRIDAY, SEPT. 13. The Beneficial Interest in the Lease of the Royal Horticultural Society's Plants, at the Blechnet Nurseries, Granville Road, Child's Hill, by order of Mrs. Gay, by Protheroe & Morris, at 12.30 o'clock. Imported and Established Orchids, such as *Oncidium*, *Phajana*, *Protholobium*, *Protholobium*, *Phajana*, *Phajana*, *Phajana*, at 12.30 o'clock. Dutch Bulbs at Protheroe & Morris' Rooms, at 11 o'clock. Dutch Bulbs at Pollexfen & Co.'s Rooms, 45, Pilgrim Street, E.C.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—58.5.

ACTUAL TEMPERATURES.—

LONDON.—September 6 (P.M.): Max. 65°; Min. 52°. September 7. Daily. PROVINCES.—September 4 (P.M.): Max. 61°; Southern Counties; Min. 52°. N. E. Scotland.

The following communication has been issued from the Board of Agriculture:—

"The Board of Agriculture, having received information of the appearance of an insect resembling the Colorado beetle (*Doryphora decemlineata*) among Potatoes on premises belonging to the London and India Dock Company at Tilbury Docks, submitted the beetle and larva to their technical advisers at the Natural History Museum at South Kensington, where they were identified as those of this pest, which has not previously been known to have bred in Great Britain, or to have been detected as imported in any but isolated instances.

Inspectors of the Board were immediately sent to Tilbury to make an examination and report on the circumstances of the attack. The inspectors found that a patch of Potatoes within a limited area on certain allotments occupied by men employed by the Dock Company was infested by the beetles, which were recognised as being present in various

stages of their existence. In pursuance of an order of the Board the immediate destruction of all the crops and grass within the area affected, which was fortunately isolated from other land, was promptly carried out.

Careful examination of the surrounding area has failed to detect any other case where the beetle has made its appearance, and it is confidently hoped that the attack has been successfully arrested. The Board, nevertheless, desire to advise growers of Potatoes of the danger which would threaten the Potato crop should this voracious insect become established and common in this country.

Provision was made for the contingency which has now arisen by the Destructive Insects Act, 1877; and the terms of the Colorado Beetle Order of 1877, issued under that statute, require all persons to give immediate notice to the police if any specimens of this insect are found, under a penalty not exceeding ten pounds. The police constable on receipt of such information must at once inform the local authority (the same as under the Diseases of Animals Acts), who are required to communicate by telegraph with the Board of Agriculture.

It may be borne in mind also that by this Order it is an offence, to which the same penalty is attached, to keep or sell any living specimen of the Colorado Beetle in any of the stages of its life.

The Colorado beetle (see Fig. 58) is from one-third to half-an-inch long, of a yellow colour, with ten longitudinal black lines down the wing-cases, and with reddish-yellow and black legs. The larva, when mature, is very thick in the middle, and of an orange or reddish-brown hue, with black spots on the lower portions. Long, oval, yellow eggs in clusters are laid by the female beetle on the under surface of the leaves of the Potato, and these may appear also in certain weeds in the vicinity. Both larvae and beetles feed voraciously on the Potato haulm, but they are also known to feed on other plants, such as Tomatoes and Poppies, while, failing more congenial food, they may possibly be found on rough grasses and other weeds."

The first notice in our columns of this destructive pest was in 1874, when we availed ourselves of an article from an American source, printed in *Hurdwicke's Science Gossip*, and evidently based on information supplied by the late Prof. RILEY.

"A man must witness," said the writer, "the myriad legions of this insect and the ravages of its never-tiring larvae in order to form an idea of the terrible danger with which Europe is threatened. . . . The devastations of the Colorado beetle are all the greater from the fact of its propagating itself with extraordinary rapidity, several broods following each other in the course of the year." The female lays from 700 to 1200 eggs on the under side of the leaf, the larvae are hatched in less than a week, feed voraciously for some seventeen days, and then retire beneath the soil to assume the pupal condition. After ten to fourteen days the perfect insect appears. "No description can do justice to the marvellous voracity of the insect, especially in the larval state."

The only remedy found useful is to dust the haulms with Paris green, or arsenite of copper, a terribly poisonous substance, demanding the most careful handling. In the *Gardeners' Chronicle*, April 18, 1874, is an

article from the late Prof. RILEY on the same subject. Our volumes for 1875, 1876, and 1877, also contain numerous notes on the subject, especially from Professor RILEY, who doubted if the insect was likely to be introduced with tubers; but the recent discovery at Tilbury Docks shows that this was too optimistic a forecast. A long article by the late ANDREW MURRAY, summing up the information to date, will be found in our columns March 17, 1877, and there is a leading article, probably from his pen, on June 30 of the same year.

On February 19, 1881, we recorded the infliction of a fine on a Devonshire man, who was proved to have some live beetles in his possession. After this time we heard nothing more of the Colorado beetle till the recent discovery at Tilbury. By far the most serious invasion we have had to record. People had come to look upon the Colorado beetle as a delusion, and it was made the subject of frivolous ridicule. The active measures taken by the Board of Agriculture are much more to the purpose, and now that attention is widely called to the danger, we may hope that the pest will not be allowed to gain a footing among us. We earnestly press upon our readers the urgent necessity of complying with the regulations, which require notice to be given of the occurrence of the beetle. A rural policeman is hardly likely, as a rule, to realise the importance of the matter, and therefore it is most desirable that cultivators and country residents should themselves notify any instance they may meet with to the Board of Agriculture or other authority.

GROUP OF FERNS SHOWN BY MESSRS. J. HILL & SON, EDMONTON (Supplementary Illustration).

—For several years past the show held by the Royal Horticultural Society at the Temple Gardens in May has been enriched by a well-grown collection of handsome, rare, and interesting exotic Ferns, exhibited by Messrs. J. Hill & Son, of Edmonton, who are renowned for the cultivation of exotic Ferns. We find, on referring to our report of the last Temple Show (*vide* issue for May 25), that the group depicted in our illustration contained examples of *Adiantum curvatum*, *peruvianum*, *Hendersonii*, *tinctum*, with its pretty tinted fronds, and the old and still rare *A. reniforme*; *Davallias*, including *assamica*, with spreading, scaly rhizomes and fronds of nearly equal width; *D. solida*, *D. filijensis* and *tenitifolia* Veitchii. Of *Pteris* there were remarked *Childsii*, a very beautiful species of the cretacea section; *P. scaberula*, *P. geaniifolia*, &c. Of *Platycremium* there were *athiopium*, *grande*, *Willinckii*, and *Alicorno* Hallii. *Leucostegia immersa*, a fine specimen, occupied the centre of the group most effectively. Other plants consisted of *Asochloa paleolata*, a tree Fern, with slender stems and spreading fronds; *Gleichenia semivestita*, *Lygodium scandens*, in fine form, showing it to be equal to *L. japonicum*, which is usually grown under the former name; *Lomaria attenuata*, *Oncidium auratum*, &c. The exhibit obtained a Silver-gilt Flora Medal.

"KEW BULLETIN."—We are glad to receive numbers of this publication, dated November and December, 1899, but which did not reach us till the end of August, 1901. The first article is one on the Jarrah and Karri timbers of West Australia, much used for paving roadways. Jarrah is the wood of *Eucalyptus marginata*; Karri that of *E. diversicolor*. The value of these timbers can hardly be over-

estimated. *E. diversicolor* is also noteworthy as an ornamental tree, and sometimes reaches a height of 200 feet. The colony of West Australia at present contains abundance of the trees, but it is satisfactory to learn that a system of forest conservancy has been established, so that reckless felling and prodigal waste may not accrue. The "Maromba" Vine disease of Portugal is stated by Mr. MASSEE to be due to the attack of a root fungus, allied to *Rosselinia necatrix*. Carbon bisulphide poured into holes in the soil is an efficacious

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees of the Royal Horticultural Society will be held on Tuesday, September 10, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. A lecture on "The Origin and Development of the Cactus Dahlia," will be given by Mr. C. G. WYATT at 3 o'clock. At a general meeting of the Royal Horticultural Society held on Tuesday, August 27, twenty-four new Fellows were elected, making 730 since the beginning of the present year.

Iris Tauri, Siehe, tab. 7793.—See *Gardeners' Chronicle*, 1901, vol. i., p. 190, fig. 71.

Oxalis dispar, N. S. Brown, tab. 7791.—A shrubby species with long-stalked, tri-foliolate leaves, and stalked clusters of yellow flowers. It is a native of British Guiana.

Impatiens Thomsoni, tab. 7795.—A Himalayan species, with loose racemes of small pink flowers.

Arctotis Gumbletoni, Hook. f., tab. 7796.—See *Gardeners' Chronicle*, present issue, p. 177, fig. 55.



FIG. 58.—THE COLORADO BEETLE, SHOWING THE EGGS, THE LARVAE, THE PUPA, AND THE PERFECT INSECT. (SEE P. 186.)

remedy. The holes should be 1 foot in depth, and 1 foot from the base of the Vine stump. One ounce of the carbon bisulphide is poured into each hole, and immediately covered with earth. As the fluid is very inflammable care must be taken not to manipulate it anywhere near a light. Chinese wood-blocks for engraving purposes are, it seems, derived from *Pyrus betulaefolia*, *Eucornia ulmoides*, *Buxus sempervirens*, a species of *Euonymus*, and *Zizyphus vulgaris*. The disuse of wood-engraving renders these details of less importance than would have been the case in former years. The personal details and the record of work done lose some of their interest from the delay in publication.

"BOTANICAL MAGAZINE."—The plants figured in the September number are the following:—

Epidendrum osmanthum, tab. 7792.—This is the *E. Godsellianum* of ROLFE in the *Gardeners' Chronicle*, 1892, i., p. 126, which it appears had been named by RODRIGUES ten years previously under the name here cited. It is a fine, loosely paniced species, with spongy-shaped segments, having reddish streaks on an olive-coloured ground; the lip projects beyond the segments and is three-lobed, the two lateral lobes are small, roundish, crenate, the anterior lobe stalked, dividing anteriorly into two roundish subdivisions like the lateral lobes; all are white with purplish nerves.

ROYAL SEEDSMEN.—MESSRS. TOOGOOD & SOSS, Royal Seedsmen, of Southampton, which old-established house enjoyed the unique honour of uninterruptedly supplying her late Majesty Queen VICTORIA for just fifty years, have been appointed by Royal Warrant seedsmen to the KING.

THE SOUTH-EASTERN AGRICULTURAL COLLEGE.—The summer course for teachers at the South-Eastern Agricultural College, Wye, concluded on August 30. It began on August 15, and was attended by thirty schoolmasters from the counties of Kent, Surrey, and Worcester. The object of the session was to develop a scheme of instruction suitable to

the children of a rural elementary school, and the course, which dealt with plants, air, water, and soil, had been previously put to a working test in the Wye Elementary School during the past two years. The lectures were followed up by practical work in the laboratory, garden, or field, so that the teachers could familiarise themselves with the construction of the necessary apparatus and the conduct of suitable experiments. Other instruction dealt with the management of school gardens, and the preservation of and mounting of specimens of grasses, weeds, injurious insects, &c., for use in school demonstrations. There were also classes dealing with the management of fruit-trees, bees, and poultry, the elements of land measuring; and on the evenings of one week a course of lectures was given to illustrate some of the recent advances in chemistry. Excursions were made to Canterbury, to Richborough, and the Stonor Marshes, to see both the Roman remains and the varied flora of that district; and again the series of interesting geological sections in the neighbourhood of Wye. Though a course of instruction in practical agriculture did not form part of the session, the teachers were conducted round the college farm and had its management and live-stock explained to them.

PLUMS AT MARKET.—Whatever may be the case in selected cases, the price of Plums at various local markets, and that charged by small retailers, appears to be reasonable, rising from 1½d. per lb. for fairly good qualities, the supply of which cannot surely be complained of. From some favoured spots the supplies are large—witness one instance in Cambridgeshire, where the harvest has been a notable one. From a local station on the G.N.R., one day 30 tons of Plums were despatched; two days later went a similar quantity; and in the week ensuing the 17th ult., the total was 90 tons; last week's total was 140 tons, nearly all sent to London. Good Greengages have been retailed at 1d. per lb., but it cannot be said of all that the quality was first-rate.

DAHLIA SHOW AT THE ROYAL AQUARIUM.—This exhibition, which will be held at the Royal Aquarium on September 17, 18, and 19, takes the place of the Dahlia show formerly held by the National Chrysanthemum Society. It is supported by the principal Dahlia cultivators and exhibitors on the grounds that it affords an opportunity for the Dahlia to be exhibited in central London, and supplies a convenient occasion for submitting the later flowering seedlings for inspection. The schedule of prizes has been extended, and classes for every type of Dahlia find a place in it. In connection with this show, Messrs. DOBBIE & Co., seed merchants, Rothsay, offer valuable special prizes for their pedigree Leeks and Onions, and it is certain that the display will be both numerous and very fine. Schedules of prizes can be obtained of the Superintendent, Mr. RICHARD DEAN, 12, Ranelagh Road, Ealing, W.

GALLS.—Messrs. HITCHINSON & Co., 24, Paternoster Row, announce the early publication of a work on *British Vegetable Galls*, by Mr. EDWARD T. COXNOLD, with 130 page illustrations. This should be very serviceable to gardeners.

GRAPES AT CHISWICK.—The large vine in the gardens of the Royal Horticultural Society at Chiswick is just now a perfect picture—indeed, it has been portrayed in these columns in previous years when in a similar condition. There is a full crop of black Grapes, which, at the time of writing,

were untouched, although so nearly ripe that the crop was expected to begin very shortly. Looking through the Grape-house, from one door to the other, we were inclined to echo the sentiment of one of the gardeners, that "it seems a pity to touch it." Other fruits now in season at Chiswick are Peaches and Nectarines; the Apples and Pears are as yet hardly ripe.

"JOURNAL DE LA SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.—The number of the transactions of the National Horticultural Society of France for July, 1901, is interesting as containing several not-worthy papers, among which we may note one by M. DUVAL on *Odontoglossum Adriane*, and those presented to the Horticultural Congress. Among these latter is a remarkable memoir on the species and varieties of *Syringa* (Lilacs), by M. HENRY, of the *Jardin des Plantes*, which of itself justifies the existence of the Congress. The species admitted are *S. pubescens*, *oblata*, *vulgaris*, *persica*, *dubia*, *Bretschneideri*, *Josikea*, and *Enodi*. M. DENAFFE contributes an elaborate memoir on the cultivated *Pea*, in which stress is laid on a useful "character." This consists in the determination of the number of sterile nodes on the haulm going from below till the first flowering node (maille) is reached. Thus in the "pois d'Avvergne," the majority of plants produce their first flowers at the twelfth node, while in Prince Albert the majority of flowers are first produced at the seventh node from the base. M. MOLLET contributes a monograph of the species of *Erenurus*, which will be serviceable to the cultivators of these noble plants.

METROPOLITAN LOCAL MARKETS.—The other day a flower vendor in an open street-market in the borough of St. Pancras was fined for obstructing the highway. The vendor must move on, as also the rest of the clan, for his was a test case. Not by many is this the first of such cases, nor probably will it be the last. Not the inhabitants, but the Borough Council, complained, and the costers are to become like so many "Poor Joes." If the various Councils object to such markets, why do not they first of all provide local market-places where vendors and purchasers may congregate and do business? It is years since the L.C.C. advocated the scheme, but if the Borough Councils wish to distinguish themselves, let them band together and provide the necessary schemes. In Paris they beat us; in every *arrondissement* there is a local market, which, we are assured, leaves little to be desired in the way of cleanliness or accommodation.

"A GUIDE TO CIRENCESTER."—Many intending holiday-makers might do worse than visit Cirencester, and we advise those whose inclinations incline them to that district to obtain this guide to the town and neighbourhood, which is edited by Mr. SCOTLAND HARMER. There are plenty of illustrations in this little book, and information concerning the history, antiquities, educational facilities, and other features of the town; excursions in the neighbourhood, sports, and natural history of the district.

BULLETIN OF THE ST. PETERSBURG BOTANIC GARDEN.—It has been decided by authorities of the Imperial Botanic Garden, St. Petersburg, to issue, at intervals, a Bulletin of Miscellaneous Information. The publication will contain brief articles only, comprising:—1, Original papers hitherto unpublished, and relating to all branches of botany; 2, Critical analyses; 3, Reports and communications

connected with the garden. Communications should be written in Russian, and be accompanied with an epitome in French or German. The editorial staff hope for the assistance of all botanists for their new publication, which they hope will prove of use. Each communication, adds Professor A. FISCHER DE WALDHEIM, should be addressed to the Imperial Botanic Garden, St. Petersburg, and should bear the name and address of the author.

ZURICH BOTANIC GARDEN: LIST OF PLANTS FOR EXCHANGE.—We have received from Zurich a list of plants offered for exchange by the Botanic Garden of the Zurich University. Applications should be addressed to the Director of the Botanic Garden and Museums of the University, Zurich, Switzerland.

THE SOCIETY OF AMERICAN FLORISTS held high festival lately at Buffalo. We have nothing in this country comparable to this association of commercial florists. The Society has recently received a charter from the Government, and enters upon a higher scale of development and usefulness. The party, numbering several hundreds, visited Niagara Falls.

"NATURE TEACHING."—The Imperial Department of Agriculture for the West Indies has issued a text-book, entitled *Nature Teaching*, based upon the general principles of agriculture. This is prepared for the use of schools by FRANCIS WALES, Government analytical and agricultural chemist, Leeward Islands. According to the preface, the book is an "attempt to place in the hands of teachers, both in elementary and secondary schools, a well selected but co-ordinate body of information suitable to West Indian conditions, to be supplemented in each case by numerous illustrations and experiments in which pupils themselves take an active part." *Nature Teaching* treats of the seed, the root, the stem, and the leaf, each separately; as regards their uses and structure both botanically and economically. There are also chapters upon the soil, plant-food and manures, flowers and fruits, weeds, and insects. The book is clearly written, but it is not intended to be read through, but to be used as a guide by the teacher in training pupils to observe for themselves, and in endeavouring to give them an intelligent interest in the everyday facts of rural life, and is very well suited for the purpose.

PUBLICATIONS RECEIVED.—*Agricultural Experiment Stations of the Louisiana State University and A. & M. College*. Report for 1900. Details the operations at three stations: At No. 1 (Audubon Park, New Orleans), with Sugar-cane, Alfalfa, Clover and Grasses, Forage Crops, Corn, Cotton, Orange-trees, and Tea-plants; at No. 2 (Baton Rouge), where farmwork generally is undertaken; No. 3 (Cahoon), with Tobacco, Onions, and Live Stock.—*From the Michigan State Agricultural College Experiment Station, Horticultural Department*: Bulletin 190, April, 1901. Vegetable Tests for 1900, by L. R. Taff and M. L. Dean. The experiments dealt with Beans, Cabbages, Sweet Corn, Cucumbers, Lettuce, Peas, Potatoes, Radishes, Squash, Pumpkins, and Tomatoes.—*The Agro-Flora of Yugoslavia*, by W. West, F.L.S., and G. S. West. Contents of third instalment (four sheets): Class Chlorophyceae, under Conjugate, to Class Bacillariaceae.—Department of Agriculture (Canada), *Central Experimental Farm, Report of the Horticulturist*, W. T. Macoun, 1900: "Owing to the favourable season this year, nearly everything made satisfactory progress in the horticultural department. The arboretum and botanic garden continue to increase in usefulness and improve in appearance every year. The collection of trees, shrubs, and herbaceous perennials is

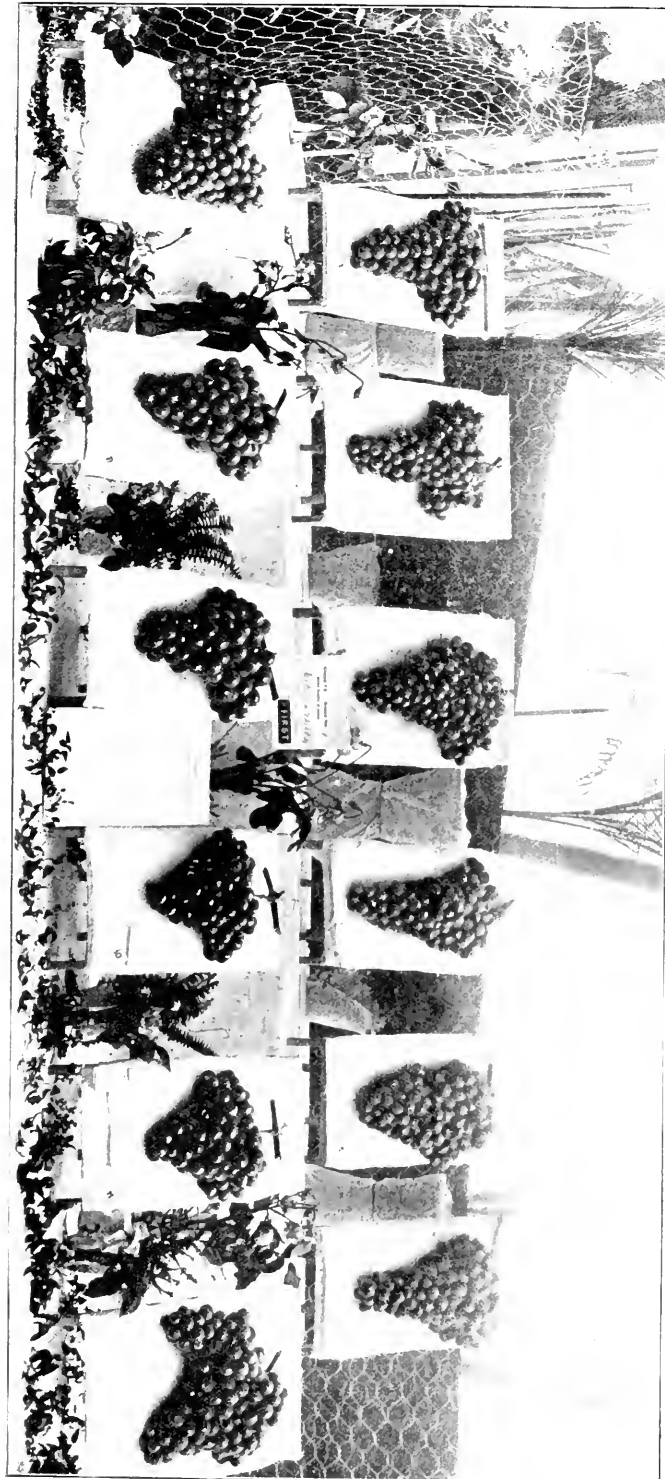


FIG. 29.—FIRST PRIZE GRAPES SHOWN AT SHREWSBURY BY MR. CAIRNS, OCTOBER. Top Row: Beginning at the upper left-hand corner, and going to the right—1, Madresfield Court; 2, 3, 4, 5, Muscat of Alexandria, white; 6, and 7, Madresfield Court. Lower Row: going from left to right—1, Althwick Seedling; 2, Gros Maree; 3, 4, 5, Muscat of Alexandria, white; 6, and 7, Black Hamburgh; 8, Althwick Seedling. Photograph by Bartlett, Shrewsbury.

now very large, and in many genera few additional species and varieties can be procured." — *Agricultural Economist*, August 1, with articles on Agriculture in the Twentieth Century, Colonial Doings, &c. — *Twenty-sixth Annual Report of the Board of Commissioners, City of Boston, Department of Parks*, for the year ending January 31, 1901; Describes the progress made, and includes illustrations showing the beauty of many of the parks and public gardens. — *The Botanical Exchange Club of the British Isles*, Report for 1900; Satisfactory, but some members contribute fewer specimens than are required by the regulations. — *Proceedings and Journal of the Agricultural and Horticultural Society of India*, January-March. A record of good work, which was somewhat hampered by heavy rains. Experiments with *Paspalum dilatatum* were very satisfactory; the plant weathered the hot season and floods, and is now growing luxuriantly. The grass is soft, and readily eaten by horses and cattle. — *Rhodora*; Journal of the New England Botanical Club, July, 1901. Contents: Obituary notice of T. C. Porter, by Thomas Meehan; Notes on Ericaceae of New England, by W. Deane; *Scutellaria parvula* and *S. ambigua*, by M. L. Fernald; *Lysimachia punctata* in Eastern Massachusetts, by A. Clark; Embryology of New England Orchids, by R. G. Leavitt; Chloranthus in Anemoneella, by B. L. Robinson; Variations in *Alisma Plantago*, by M. L. Fernald; and Herbaria of New England, by M. A. Day. — *Annual Report on the Government Cinchona Plantation and Factory in Bengal, for the year 1899-1900*. The rainfall for the year 1899 was the heaviest recorded since the establishment of the Government Cinchona Plantation in Sikkim. A disastrous rain-storm in September did considerable damage. The continuous wet weather was unfavourable to the growth of Cinchonas; while, perhaps as a consequence of these otherwise unfavourable conditions, the damage done by *Helopeltis* has been considerable. *Annual Report of the Royal Botanic Garden, Calcutta, for the year 1900-1901*. The weather conditions during the first half of the year under review were normal. In the middle of September a period of excessive rainfall set in, which lasted till the 25th. The arrangements for the surface-drainage of the Gardens proved inadequate to meet the needs of precipitation so phenomenal. In the eastern section of the Garden little damage was done by the flood. In the western half, however, many losses have unfortunately to be recorded. Many trees fell, but the great damage has been the death of many species as they stood. *Agricultural Journal of the Cape of Good Hope*, July 18. This includes reports and prospects of various stations, and notes on Medic-stalk Sugar, Grass Fires, and other agricultural details.

PRIZE GRAPES.

We are able this week to lay before our readers an illustration of the Grapes shown in the class for a collection, in four or more distinct varieties, at the recent show at Shrewsbury, by Mr. Cairns, of Balfordery, Dundee (see p. 160 of our issue for August 21). The photograph was taken by Mr. Bartlett, and is excellent so far as form is concerned, but gives no idea of the colour, bloom, or "finish." The twelve bunches were shown in two rows. In the upper row the end bunches were of Madresfield Court; that to the left obtained 8 points, that to the extreme right 8½ points. The four central bunches were of Muscat of Alexandria, which obtained, going from left to right, 8, 8½, 7½, and 8 points respectively. In the lower row, the two end bunches were of Althwick Seedling, of which that to the left was awarded 8 points, that to the right 8½ points. Following the Althwick Seedling, going from the left to the right, were two bunches of Gros Maree, both of which were adjudged 8 points; next come two bunches of Black Hamburgh, the one to the left gaining 8, the other 7½ points. The total number of marks was 96½, out of a possible 112.

We congratulate Mr. Cairns on his success.

HOME CORRESPONDENCE.

THE SYLHET ORANGE.—This is the fine orange, grown solely from seed in the Khasia Hills of eastern Bengal, and sent in large numbers to Calcutta. It belongs to the Sontara group of loose-skinned Oranges. A writer in 1869 calculated that at Shalla, in those hills, there was an Orange-garden of about 1,000 acres, and that one might walk "for a good hour or two, always under the shade of Orange-trees, without reaching the limits of cultivation." I wanted to make an experiment, by obtaining some seeds of this fine Orange from Lucknow, where this variety is also grown. So I asked the Superintendent of the Lucknow Horticultural Gardens to send me two of these Oranges in a small box by parcel post. I conjectured that even if the Oranges reached me in a rotten condition, I might perhaps still be able to get their seeds to germinate. The two Oranges came in a quite rotten condition, and perfectly black. The seeds of one were discoloured, but those of the other were of a normal colour. I sowed the seeds of each Orange in a separate small pot, and placed them in heat. They all germinated! And now I have twenty-two healthy seedlings of the Sylhet Orange several inches high. So we now know that Orange-seeds of all kinds, I should say, can be sent from all parts in their fruit by parcel post; and Orange-growers in the West Indies should take note of this, and endeavour to introduce this fine Orange into those islands. In the Khasia Hills, as I said, the only mode of propagating this Orange-tree is by seed. The history of my little Orange-plants is somewhat interesting. This variety of Orange is grown in the Khasia Hills and sent to Calcutta. Many years ago the head gardener of the Lucknow Horticultural Garden had some Sylhet Oranges sent to him from Calcutta, he sowed the seeds in that garden, and now from Lucknow the seeds of those trees have come to Worthing, and the resulting plants may yet travel further. If planted in proper soil and a suitable climate, I should say the seedlings would fruit in five or six years. The Sylhet Orange is much like that of Magpore, but the habit of the two trees is different. The branches of the Magpore tree are spreading, while those of the Sylhet-tree are upright. *E. Bonavia, M.D., Worthing, July 23, 1901.*

SAGITTARIA JAPONICA, FL. PL.—Seeing the illustration of this plant and your note on p. 170, I can assure you that it is perfectly hardy, having planted it seven or eight years ago in the ponds here. The plant has increased to such an extent that I am obliged to clear it out by the wheelbarrow at times to keep it from choking the other water plants growing in the same pond. Although it will grow in water 2 feet deep, it delights in more shallow water, with a good depth of mud; here it has found its way into the banks round the ponds 2 and 3 feet from the water's edge. The flower-spikes are thrown up 1½ to 2 feet in height, and they carry four to six tiers of large, very double, pure white blooms, and have a noble appearance. It grows freely in moist or boggy ground. We have several other single-flowered Sagittarias which are hardy, but the most beautiful of all is *S. montevicensis*, which is not quite hardy, and must be wintered indoors. We place it in the open ponds in the last week in the month of May, and it soon begins to throw up its spikes of pretty creamy-white flowers, with dark chocolate centres. *W. J. Townsend, Sandhurst Lodge, Berks.*

ERICA STUARTI.—I enclose a specimen in fine flower of a charming Irish Heath, Erica Stuarti. This lovely Heath was discovered by Dr. Charles Stuart, of Chirnside, Derbyshire, in Connemara, during an excursion of the Scottish Alpine Botanical Club to that district in 1890. It was found growing along with Erica Mackaiana, to which it is perhaps related, but is nevertheless a most distinct and beautiful hardy Heath. *R. Lindsay, Kaimies*

Lodge, Murrayfield, Midlothian, July 4, 1901. [The specimen sent was to our thinking very like *E. tetralix*, of which *E. Mackaiana* is a form. *Ed.*]

GUNNERSBURY PARK GARDENS.—This is one of the most charming old gardens near London, and will bear comparison in many respects with the best in more favoured districts, where the air is purer and more favourable to vegetation. Those who remember the fine old Cedars there will regret to hear that they show unmistakable signs of decay. However, it is not intended to sweep these old monarchs of the pleasure-grounds entirely away; after trimming the dead branches back a little, Ivy and other climbing plants are being planted to cover the dead trunks, and again clothe the branches with life. In a few years what now appears unsightly will be pleasing to look at, and a remembrance to many who visit the gardens of what were once some of the finest trees in this country. Very recently the writer enjoyed a walk through the gardens with Mr. Reynolds. Everything under glass looked clean, healthy, and in good order. The practised eye delights to run over cultivation of this kind. Lately some improvements have been made in the pleasure-grounds, more herbaceous species have been planted for autumn flowering, and grouped beds have been arranged of different classes of plants. Here one comes across a whole bed of scented foliage plants, further on one containing all berried plants, which will look cheerful after Jack Frost has wiped out many of the other pictures on the lawn. On the terrace, Mr. Reynolds has arranged a wealth of large-flowering plants which have taken years to grow. When these are allowed to develop their harvest of blossom, the exterior of the mansion will look at its best. *G. H. R.*

HOW SYNONYMS ARE MANUFACTURED.—I observe in a catalogue of Dutch bulbs, issued by Messrs. E. H. Krelage & Son, of Haarlem, a list of early Tulips, among them one bearing the name of "Brunnhilde (L'Unique), white with golden bars (Award of Merit, 1901)." The correct reading is Unique (syn. Brunnhilde), because for three years past for certain, and probably four, this Tulip has been publicly exhibited by local growers at the exhibitions of the Midland Daffodil Society, at Birmingham, under the name of Unique. It is about four years ago I saw this Tulip in bloom in Mr. Sydenham's garden in the Bristol Road, Birmingham, bearing the name of Unique. Mr. Sydenham, when in Holland a year before, had seen this Tulip in a Dutch collection, and he imported some bulbs under this name, together with Spaendock, and one or two other novelties. I was much struck with Unique—a white Pottbakker, with a yellow flame springing from the base of each white petal, and running half-way up it. When last spring Messrs. Barr & Sons exhibited Unique under the new name of Brunnhilde, I pointed out to the Floral Committee of the Royal Horticultural Society that it had been imported from Holland under the name of Unique, and grown and publicly exhibited at Birmingham as Unique; I also said it was catalogued by Mr. Robert Sydenham under this name. Unfortunately, the Committee turned a deaf ear to my remonstrance, and gave Unique an Award of Merit under the name of Brunnhilde. I appealed to Mr. de Graaf, who was present at the Drill Hall on that occasion, and he (no mean authority) declared that the original name of the variety is Unique. Messrs. E. H. Krelage & Son acknowledge the identity by putting Unique after Brunnhilde. On the occasion when an Award of Merit was made to Unique under the name of Brunnhilde, Messrs. Hogg & Robertson, of Dublin, had the very same variety in their collection of Tulips under the name of "Pottbakker, white and gold." Unfortunately, in the list of early single Tulips, given in their catalogue of bulbs just issued, they announce the variety as "Brunnhilde (syn. Unique, Pottbakker, white and gold)." If anyone will refer to the reports of the Mid-

land Daffodil Society for the past three years, which appear in the *Gardeners' Chronicle*, they will find mention of Unique as having been exhibited in the class for six pots of early single Tulips. I call attention to this matter on public grounds. It is the duty of everyone having reliable knowledge to endeavour to reduce the number of synonyms, and the Floral Committee of the Royal Horticultural Society should be most careful how they consciously lend themselves to the furtherance of such an abuse. *R. Dean.*

FRUITLESS PURSUIT OF MELONS.—I read the note on this subject with much interest, and am not much surprised, as I have known the time, about six years ago when living in Wiltshire, that you could only get about *fid.* return for good Melons at Bourne-mouth. No wonder that Melon-growing has ceased to a great extent. Who would care to grow Melons for profit at that price during the early part of the season, especially at the present cost of fuel? I see the London market prices are now not very encouraging. If Bourne-mouth is without fruit, no doubt the Water Melons keep the price down in London. *G. Fulford, Presdates, Ware.*

WEATHER LORE FOR SEPTEMBER.—

"Season of mist and yellow fruitfulness,
Close bosom friend of the maturing sun,
Conspiring with him how to bless
With fruit the Vine, that round the thatch-
eaves run;
To bend with Apples the moss'd cottage
trees,
And fill all fruit with ripeness to the core."
Keats.

"So many days old the moon is on Michaelmas'
day, so many floods after."
"September blow soft,
Till the fruit's in the loft." *J. C.*

THE ICE APPLE.—The famous Mons. de la Quintinie, who was chief director of all the gardens of the French King during the latter half of the seventeenth century, refers to these as one of the sorts of Apples that are good to eat "raw or baked." He did not prize them so much as the "Gray Pippin, White Pippin, Autumn Calville, the Api and the Violet Apple," but they were "no bad fruit." They were one of the three sorts that are bigger than the others, and more long than flat, and "thicker towards the stalk than towards the head." He says they are so called "because when they ripen, they seem to grow transparent, without being really so. They are altogether greenish and whitish, and make no great figure among any truly curious persons." The same writer refers to the "Violet Ice Apple and the Black Ice Apple." There are many varieties of Apples growing at the Woburn Fruit Farm, but I have not seen any of this variety. The Apples from Kashmir are bearing a fair crop this year. I suppose for the first time in England. They are interesting, but more curious than valuable. If Mr. Castle has any Ice Apples, then perhaps he will tell us. *Charles J. Kilby, Manor Gardens, Milton Bryan.*

FINE PEACHES AT WARLES PARK, WALTHAM ABBEY.—On the occasion of a recent visit paid to Sir T. FORB BENTON'S gardens, I remarked a fine crop of Peaches generally, and in particular on two trees of Sea Eagle and Princess of Wales planted in a span-roofed house. The crop of fruit on these two trees was an unusually heavy one, and the fruits of great size. Some of the latter weighed almost 1 lb. These trees have been planted three years, and are vigorous and healthy. *B. H. P.*

HEMEROCALLIS AURANTIACA MAJOR, &C.—I was interested in reading your correspondent's remarks about *Hemerocallis aurantiaca* major on p. 170, as I bought a plant of it from Messrs. Wallace of Colchester early in 1897. It was, I think, in 1898 that it flowered first. I had to move it that autumn, but it flowered

again the next year, though not in 1900. This year it threw up two flower-spikes with ten blooms on each, some are past, some coming on. The flowers are about 6 inches or more across, and of rich orange-yellow, a most striking flower, carried on stiff spikes about 24 inches in height; some of the leaves are more than 30 inches long. The plant has now four crowns, and is in excellent health, although it gets practically no attention beyond having the weeds kept down, and being afforded water in dry weather. Next to it is a clump of *H. flava*, which also grows well, flowers profusely, and seeds freely. The soil is heavy, but dug some 24 inches deep. I send you herewith two leaves of *Hemerocallis aurantiaca* major, and a bud and flower, the latter much past its best; also two leaves and a flower-spike of *H. flava*, Ernest Bewley, Rathmines, co. Dublin.

BOUSSINGAULTIA BASELLOIDES.—Will you kindly allow me a little space for my experience with *Boussingaultia baselloides*, my plants of which came from India, and were potted up in May 1899. They were kept in snail pots until January, 1900, when I planted some of them against the back wall of an early Peach-house, and they flowered in September, 1901, the soil used being a mixture of peat, loam, and leaf-mould, and a moderate quantity of silver sand. I may say that some of the leaders were quite 30 feet long, and they flowered at the extremities of the side-shoots. The plant likes plenty of water and air, but I did not think it worth its room, so I threw it out. A few degrees of frost will kill it down. *W. Ireland, Gardens, Fota-Beg, Cork.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

AGUST 27. *President.* Dr. M. C. Cooke, in the Chair. Messrs. Chapman, Dreary, Odell, Houston, Worsley, Bowles, Saunders, Rev. W. Wilks, Drs. Rendell and Masters.

Apricot Splitting. Dr. COOKE reported on the Apricot pulp of which was found to be split, and a foreign substance growing upon it. This, however, was nothing but the common blue mould which grows on decaying matter. Mr. Worsley assigned various causes for the splitting of the fruit.

Silver Leaf. Dr. COOKE stated that it was doubtful if there was any essential relation between gumming and the so-called silver-leaf disease of the Plumace. Dr. Cooke doubted whether the fungus called *Coryneum Beijerinckii* has any causal connection with gumming. On the other hand, gumming in *Prunus japonica* had been traced to *Clado-porium epphyllum*.

Miscellaneous Notes. Dr. COOKE stated that he had been unable to find any fungus on the *Crocus-cornus* submitted by Mr. Bowles, nor on the Violet leaves sent from Ireland; the frosted spots were due to the precipitation of the salts from the solution with which the leaves had been sprayed (see *Gardener's Chronicle*, August 21, p. 190, col. 4), where the appearances are attributed to a fungus, *Phyllosticta violet*.

Gambesey Shoots. Some shoots which were shrivelled and dead were exhibited, the assumed cause being the presence of red spider.

Ascus of Apogony. Mr. DREARY exhibited cultures showing developed masses of prothallia on the basal sides of *Althya* (*Althya romana* var. *crispata*) imbrications, raised by Mr. Garnett, of Bowles's, Windsor, mere. A branch of this Fern was exhibited at the recent meeting of the British Pteridological Society, and Mr. Deney remarked at a conference great likeness in make to *A. l. clausiana*, Jones, though it differed from that Fern in bearing long slender, much divided tassels at all tips, rendering it a very beautiful form. On examining the soil they exhibited so strongly the white, woolly character indicative of apogony, that permission was asked and obtained to put some material under culture, the immediate result of which was an extension of the sporangial growth, demonstrating once again that abnormally slender, linear gametes are correlated with apogony. There are some indications also of apical apogony, but not yet definite enough to be determined with certainty. Sexual apogony is, however, beyond a doubt. This represents the fourth instance of apogony in *Althya* (*Althya romana*).

Mr. DREARY also exhibited a culture showing apical apogony in *Lastrea pseudo-mas* apogonia, already recorded; well developed prothallia springing from all the imbricate tips of the crests of the pinnae.

Giant snailmoss on a species of Silver Fir.—A specimen was shown of the swellings produced by a *Cocculus*-like insect (dig. 69). Petroleum emulsion was recommended as a palliative, and destruction by fire of the affected shoots advised.

Medicinal Plants in the vicinity of old ruins.—Mr. HOUSSON asked for information as to any paper dealing with the presence of herbs around mediæval ruins. The presence of *Aristolochia clematitis* around the ruins at Godstow, Oxford, was cited as one illustration.

Poisonous Plants.—Mr. BOWLES alluded to the poisonous effects produced by contact with the so-called *Apoposys* (Hogg), which turned out to be really *Rhus Toxicodendron*.

Mr. MASTERS alluded to many similar cases, all traceable to the distribution from a particular nursery of *Rhus Toxicodendron* instead of *Anaplexis*.

A conversation arose in connection with this subject, Mr. DREARY stating that honey in any form produced



FIG. 105. GATEWAY VIBES AMARILIS.

uneatable scum, with *Aspilota*, and Dr. COOKE alluded to other cases in which *Mus-trochus* produced evil effects upon some persons, and not upon others, who partook of the fruit at the same time.

Andromeda (read out). A Fellow of the Society, present as a visitor, exhibited fine specimens of *Agaricus campestris* var. *valentinus*, which was growing abundantly on the walls of a cave called "Saiding" the walls was recommended as a remedy.

Chomocoma (specimen of a Beech bark) were shown in illustration of the above case of this insect's disease. Unfortunately, the attack was so widely spread that anything in the way of cure was impracticable.

Tata Apple. Mr. HUBERT sent a specimen of an apple in which two Apples were partly fused together at the base, probably from pressure causing mutual grafting in a young state.

Agave and Narcissus. Mr. WORSLEY exhibited specimens of *Bom-citium mac-carum* from South Africa, and of *P. Ruppellii* from Abyssinia. Mr. Worsley also exhibited a *Cocculus*, in which the ordinary ray flowers had been replaced by regular tubular ones.

Andropogon (read out) in *Clavaria*. Mr. WORSLEY also stated that since his previous communication on this subject, he had found that the seedling plants of *C. yunnanensis* exhibited the same peculiarity.

Two-fold Helianthus. Dr. MASTERS exhibited shoot of *Helianthus* "Mr. Mellish" of two forms, from the same stock, one short, erect, green, and robust in habit, the other slender, deep purple and greatly resembling the shoots of *Helianthus rigidum*, exhibited for comparison.

EASTBOURNE HORTICULTURAL.

AG-USE 21.—The annual show was held on this date in the fine grounds of Compton House. This is one place in the South where may still be seen the fine specimen plants of bygone times, and now so rarely to be seen at exhibitions, and the competition in those classes is keen. The foliage plants of Sir A. LAMB, Bart, and Messrs. P. A. EAGLES and WARREN were almost too large to be accommodated in the tent.

Roses made a special feature, and Mr. WILL TAYLOR, nurseryman, Hampton, Middlesex, showed splendid blooms.

Tables laid out with fruit and set off by plants, &c., were another welcome feature, fruit being expected to be the most prominent objects, and in Mr. F. W. THOMAS exhibited this was happily the case. A word of commendation must be accorded Mr. Gore, the Superintendent of the tents, for the excellent arrangement he had made; to the Secretary, Mr. H. J. Capon; and a very helpful body of committeemen.

PLANTS.

For stove and greenhouse plants in eight kinds, Mr. T. Portnell, gr. to Sir A. LAMB, Bart., Beauport, Hastings, was a good 1st, with grandly flowered *Almandra*, *Polypodium*, *Bougainvillea*, *Ficus*, *Lapageria rosea*, and *Staph. Gilberti*. Mr. A. Gadd, gr. to P. A. EAGLES, Esq., Hollington, was a close 2nd, and J. WILKIN, Esq., Hand cross, Park, gr. Mr. OLFER, 3rd. In the smaller classes, in all kinds, the same exhibitors took the prizes in the order of their names, but in the large foliage class, J. WILKIN, Esq., was a easy 1st, having splendid specimens, Mr. PORTNELL 2nd, and Mr. GADD 3rd.

For six foliage plants, Messrs. OLFER and PORTNELL were the winners.

The class for exotic Ferns brought large specimens, and Mr. OLFER took the premier prize with beautiful specimens of Tree Ferns, Mr. GADD was 2nd.

For eight species, distinct, Messrs. OLFER and GADD were again the successful competitors.

Groups of plants arranged for effect brought severely my competition, and the 1st prize went to Mr. H. T. DIXON, gr. Woodside, Huddersham, and the best arranged group of Ferns was that staged by Mr. T. PORTNELL, who had an easy win.

LET FLOWERS.

For thirty six varieties, distinct, of Roses, Mr. WILL TAYLOR, Hampton, had very fine blooms, considering the late date, and worthily took the 1st prize; 2nd, Messrs. BROOK & SON, nurserymen, Eastbourne; and Mr. H. HARRIS, gr., Deane Park, Horsham, was 3rd.

The best twelve blooms of any one variety were shown by Mr. W. TAYLOR 2nd, Messrs. SLAUGHTER, JARVIS, and STENNING, and 3rd, Mr. H. HARRIS.

The best collection of animals came from Mr. E. RIPLEY, gr. to Miss VICKER, 2nd, Mr. W. PETERS, gr. to A. J. HALL, Esq., St. Leonards.

The competition in the classes for Dahlias brought exhibitors from a distance, and some capital blooms were shown. For show varieties, Messrs. PETERS and STENNING were 1st and 2nd respectively; and for cactus varieties, Messrs. STENNING, RIPLEY, and PETERS took prizes in the order of their names. Messrs. STENNING and GREENSDALE were 1st and 2nd respectively for Pompons.

Herbaceous perennials-as cut flowers were well shown by Mr. RIPLEY & Mr. PETERS, and cut blooms of stove and greenhouse by Messrs. OLFER, PORTNELL, and WILKIN respectively, who took 1st, 2nd, and 3rd, in the order of their names.

The best decorated dining table in the open class was that shown by Messrs. DREARY & YOUNG, Eastbourne. They had in the centre of it three large bowls of mixed flowers, a rather heavy looking feature. Mr. W. STURDY, Eastbourne, was 2nd, his materials consisting of Sweet Peas. The ladies' tables were better and more lightly arranged, and there was more competition in their class. Mrs. PARKIN, St. Johns, Withdean, Brighton, was 1st, Miss SCOTT WALKER, Eastbourne, 2nd, and Miss JENNER, Bath 3rd. Some other tables, not in the prize list, were very effective and much admired.

FRUIT.

The leading feature, as has been stated, was the decorated tables, and the 1st prize was won by Mr. THOMAS WANSBOK, whose materials consisted of masses and *Cocculus*, well finished Grapes in much variety, and splendid Peaches, Nectarines, a Melon, and other fruits. Mr. GREGG, gr. to Lord Ashburnham Ashburnham Place, Bath 2nd, his best fruits were not quite ripe. Mr. THOMAS was 1st with bunches of table was rather too much crowded with heavy looking plants. Mr. PENROSE, Windmill Hill, was 3rd. This last exhibitor used Tomatoes freely, which would have been better left out.

In a dessert fruit competition, the Black Grape class was a good one, although some of the larger bunches were not quite ripe. Mr. THOMAS was 1st with bunches having large, well coloured berries; and Messrs. HAYGAR and COLGATE were 2nd and 3rd respectively.

The any other Black Grape class brought good fruit, Messrs. TUGWELL and PENROSE being 1st and 2nd.

White Grapes made a poor show and only a 2nd prize was awarded, viz. to Mr. CLARSON. Figs were splendid and rarely anywhere excepting

at Brighton are such fine fruits to be seen. Messrs WELLES, THOMPSON, and BLACKMAN were the winners.

Best-set Apples were good. Messrs GRIGG, MARTIN and WILSON took 1st and 2nd prizes; and for culinary varieties, Messrs THOMAS, COLGATE and CLAYSON were respectively 1st, 2nd and 3rd.

For Peas, Messrs THOMAS and WHITING showed the best.

There were splendid Peaches and Nectarines, Messrs. COLGATE, STILES and EAST winning for Peaches, and Messrs. THOMAS, TWISSELL and GRIGG for Nectarines.

The chief awards for collections of vegetables were taken by Messrs. RAHEY, GOLDSMITH, and COLGATE; and for Tomatoes, by Messrs. WADDELL, EAST, and PENROSE.

MISCELLANEOUS.

Messrs. CHAM, & SONS, Crawley, showed Dahlias splendidly; as did Mr. CHARTTON, Tunbridge Wells; and Mr. SHERWOOD, St. Leonards.

Mr. H. T. DIXON showed Sweet Peas. Mr. THOMAS had a grand bank of Begonias. Mr. MAY, gr. Compton House, had a splendid decorative group, beautifully arranged, and a group came also from Mr. G. T. SCOTT, Eastbourne.

THE NATIONAL HORTICULTURAL SOCIETY OF FRANCE.

August 22.—The French National Horticultural Society held in Paris an exhibition of flowering plants on the above date. This was successful, although not very remarkable. There were some excellent Cannas given by M. VILMORIN-ANDRIEU, well grown, and including small, dwarf, and well-flowered specimens of some of the best varieties. There were no new sorts; apparently Cannas have reached the maximum of beauty, and the limit cannot be passed.

Messrs. CAVEYX & LE CLERC, of Paris, showed some fine Gladioli, as did M. GRAVEREAU, of Neuville, and MM. VILMORIN-ANDRIEU. The most remarkable Gladioli had rounded stems, and the flowers are set all round the axis. Messrs. CAVEYX & LE CLERC sent some fine perennial Phlox and hybrid perennial Delphinium.

M. MOUBERT-BREUVAL, of Boulogne la Reine, showed a series of fruits of small-fruited pomegranate plants, intended for ornament (Crataegus, Berberis, Sorbus, Cotonea, Koehreuteria, Symphoricarpos, &c.), and flowering branches of Yucca Agaves, Castus, Tamarius, and Polygonum sachalinense.

M. AUBRIOT, of Bouisy St. Leger, showed some fine seedling Carnations, with large flowers and erect stems. Among the other exhibits, some fine fruit was noticeable.

There will be another flower and fruit show held by the Society on September 26, and an autumn exhibition, chiefly of Chrysanthemums, on November 12. It is not known where this will be held. The marquee erected annually in the Tuilleries proves expensive, and the floods of rain last May showed the inconvenience of this temporary arrangement. The spring exhibition, in consequence of the accident, was a financial failure, and complaints were so numerous as to result in the resignation of the President of the Organisation Committee. For the autumn exhibitions one of the proposals left to the Universal Exhibition of 1903 is proposed—probably the glass-houses of Cours-la-Reine, or the Palais des Arts, at Evreux; the latter is particularly likely to be used for the Chrysanthemum show.

Alterations are being made in the rules of the Society. Hitherto, novelties brought before the committee received 1st, 2nd, and 3rd class certificates of merit. It is decided that there shall be one class and one certificate, as it has been found that some firms, for trade purposes, falsify their "certificate of merit," and do not notice the class.

The last number of the *Journal de Societe Nationale d'Horticulture* has published the Report of the 1901 Horticultural Congress, and also some "Memoires Preliminaires," by various writers, which will serve as a basis for discussion, and so should be published before and not after the Congress.

Among these notes, or some interesting communication elsewhere referred to, dealing with artificial fertilisation, and also general notes by M. L. Henry, on *Stylocis* and *Lagustrina*; by M. Germain, on *Rosea*; M. Denante, of Grignon, on *Peas*; and by M. S. Mottet, on *Eranthis*. The Society at the same time has also published the programme since the 1902 Congress, thus giving six months' notice to those who may wish to prepare papers; therefore it is to be hoped that information concerning these papers may be made known the year previous to the Congress.

In this programme such interesting questions are proposed as—A Study on Glass-houses; on the Influence of Daylight on the Growth of Vegetation; the Society continues to invite the authors of monographs proposed last year, excepting those on the genera already dealt with in 1901.

The Organisation Committee also announces two subjects of discussion for the 1903 Congress, one dealing with the Uses of Plant-foods; and the Committee is wise to have given a long time for the consideration of so important a subject. *H. T. GRIMMOND.*

ROCK FERRY HORTICULTURAL.

August 23.—It was a bold effort on the part of the committee of this newly-formed Association to offer such a splendid prize list on the occasion of their first show, which was opened on Friday last in St. Peter's Hall, a by-no-means suitable place to display the grand produce brought together. Every room and balcony was fully taxed, and a large marquee erected in which to hold the allotment exhibits, the money alone given in the latter classes amounting to over one hundred pounds. The committee asked that all exhibits might, as far as possible, be named; but there was much looseness in this respect among the vegetable classes.

For a group of miscellaneous plants arranged for effect, Mr. HENRY GIBSON, of West Derby, had an easy 1st; a large amount of Maidenhair Fern formed the pillars and groundwork, changing do-plants of the Crotons, Caladium argenteum, Orchids, &c. being used sparingly, but get judiciously. A fair 2nd was put up by Mr. K. Roberts, gr. to G. C. PATON, Esq., The Poplars, Beblington.

In the smaller group, Mr. E. Stokes, gr. to J. H. KENSON, Esq., Egerton Park, Rock Ferry, used a less pretentious style, a tall Palm surrounding the whole, and the flatness was relieved by some well-flowered plants of *Onchidium variegatum* Rogersii. Mr. J. BRYAN, gr. to ERNEST PEELE, Esq., "The Redlands," Rock Ferry, was placed 2nd.

STOVE AND GREENHOUSE PLANTS.

Mr. BRYAN was also successful in the classes for stove or greenhouse plants, a typical Begonia, and a well-flowered *Pinnulago capensis* being attractive, for a *Lantana borbonica*, two *Fuchsias*, and three zonal Pelargoniums. Three excellent *Pyramidal Colons* came from Mr. E. STOKES, the best two exotic Ferns from Mr. R. ROBERTS, and tuberosus Begonias from Mr. J. BRADSHAW.

CUT FLOWERS.

These throughout were of a most superior order, the floral display 1 feet by 2 feet being secured by Mr. H. GIBSON, with a light arrangement of mixed Sweet Peas and grasses, the 2nd prize being awarded to a choice collection of various Dahlias flatterly arranged.

Tomatoes were not of great merit, but the twelve bunches of out-door flowers from Mr. JOHN LEE were the perfection of arrangement, and brilliant in colour.

The chief Rose prize was taken by Mr. LITTLE, gr. to G. H. PILKINGTON, Roby.

Mr. C. A. YOUNG, of the Floral Nursery, West Derby, had a remarkably good 1st prize collection of Carnations and Proteas, arranged with their own foliage, more conspicuous from the fact of the many beautiful own raised seedlings noticed.

The various table decorations were most elegant, Miss ISABEL KENDALL 1st, Mrs. W. H. KENDALL 2nd, and Miss KENSON 3rd.

FRUIT.

Every class was fully contended, the quality being admirable. For the collection of six dishes Mr. FERGUSON, gr. to Mrs. PATERSON, Rock Ferry, had a splendid lot, consisting of Black Hamburgs, a choice Alexander Grapes, Greenage Plums, and Mincet of Boyenne d'Été Peas, and Pinnepale Nectarines. Mr. C. Irvine, gr. to P. C. D. CASTLE, Esq., was placed 2nd.

Mr. CASTLE also put up fine samples of out-door fruits. Mr. J. RICHARDS had his fine Black Hamburgs, a long open pear of highly finished Madresfield Court, and three bunches of Mincet of Alexander Grapes; the remaining prize for any other white-fleshed fruit, Morgan, gr. to M. HARVEY, Esq., Rock Ferry, who also scored with Elrige Nectarines. A grand dish of Belle-garde Peaches was put up by Mr. A. CRISP, gr. to W. PATERSON, Esq. From Mr. T. THOMAS, gr. to T. W. OAKSHOTT, Derby House, Rock Ferry, came *Compendio di Bologna* as the best green-fleshed Melon; Mr. HARVEY struck a very unusual score.

Barely fruits were noticeable in every way.

VEGETABLES.

The best twelve came from Mr. G. TAYLOR, Little Sulton, but as they were without names comment is almost needless. Mr. PATERSON, Rock Ferry, had a splendid lot, consisting of Purple Windsor cabbages, and International as the best three dishes of Potatoes, and excellent Onions and Celery. Mr. W. MULLINSON carried off the Tomato prize.

In concluding, it may safely be said that the Rock Ferry Show is likely to become permanent. *R. P. GRIMMOND.*

HORTICULTURAL EXHIBITION AT BRUGES.

August 24, 25, 27.—The fine square Market Square of Bruges was, on this occasion, transformed into a beautiful garden, and the ancient halcyon looked down upon a novel sight, for nurserymen and amateur-vied with each other in friendly rivalry where an years gone by they a sanguinary contest was fought.

The Royal Horticultural Society of Bruges (the oldest horticultural association in the world, founded in the

sixteenth century) and the Society of Gardeners united to make this exhibition, under the auspices of a very influential society, known as "Bruges on Avani."

M. le Comte d'Ursel, Governor of the Province, said at the opening ceremony, "I had looked for an experiment, but you have made of your first exhibition a masterpiece." The exhibits came from Bruges only, but their number and importance show how greatly the nursery of the district have increased of late years. A very influential jury, kindly invited by the committee, representatives of eight nationalities being present; Great Britain was represented by the following gentlemen:—Messrs. Wm. Garraway, Peter Veitch, Arthur Turner, Robt. P. Ker, Fred. Boyle, J. Bruckhaus, and M. K. Dross.

The main display was in the Grande Place, but an important part was held in the Hall of the Belfry, and in the Government Building, which also faces the Square.

The most striking specially in the cultures of Bruges is that of the Bay Trees. Over 2,000 were shown, varying from 50 year old specimens to small plants of 2 and 3 ft.

In the centre of the square is the statue to two patriots in the troubled days of old. At the base hung a gigantic Laurel wreath some 15 feet in circumference, decked with red and white ribbon, the colours of the town.

A large proportion of the Bay Trees was exhibited by Messrs. F. SANDER & Co.; in fact, this firm contributed very largely to the general success of the exhibition, having brought an immense number and variety of plants.

M. VINCKE DEBARDIN showed some of his big specimen Bay Trees in several forms; and Mlle. KANAFER DE GLASS sent eight very beautiful columns, 10 feet high, of *Eugenia australis* in flower. These and the Bays stood round the beds of *Pentstemon*, *Asters*, *Lilies*, &c., shown by JELES CRAM, Pelargonium plantum from VEIHBACH-BAV, and others.

Not less effective were the beds of Begonias, such as *Lafayette Surpassé*, *Daviesi*, *Perfection Rose*, shown by Messrs. SANDER, whose double Begonias were well-nigh perfect. The colours well separated in a star-shaped pattern.

The fine groups of Myrtles were shown by Mr. STRIMMEZ and VAN PAU. Further on were large masses of *Phoradendron*, *Euryas*, *Araucarias*, besides many other good decorative plants. The 1st prize for *Ducenas* fell to the Société "Flandria"; and from VAN WALKER came good collections of *Conifers*.

Very beautiful was the garden thus laid out in the very heart of the city, the numerous squares around which were decked and bedged on the occasion. The some what uneven paving stones were covered with sand, and good paths thus enabled the visitors to promenade in comfort and listen to the excellent military band, which was supplemented in the intervals by the carillons on the celebrated Belfry Bells.

In Belfry Hall were the exhibits of the Society of Gardeners, consisting of the most useful decorative plants in commercial sizes. Worthily of special mention were the Bay Trees from LINDBO, *Lantana* from SOMERLINCK and VANDEN BOSS, *Kentias* from VAN PAU.

Very striking was a group of *Lantana borbonica aurea*—a splendid golden Palm, shown by Mr. STRIMMEZ, for which he was awarded the large 6th Medal. A number and variety of other Orchids was shown by M. VINCKE-DEBARDIN, in which were several good varieties of *Cattleya Gaskelliana* and *gigas*, and a new hybrid *Cypripedium* "Vincet 2."

The Société "Flandria," and Messrs. SANDER, showed fine groups of twenty-five distinct Palms. The latter received the 1st prize. Their group contained very fine specimens of *Leucodia grandis*, *Kentia Sommeriana*, *Gladiolus*, *Phoradendron*, *Eugenia australis*, *Gladiolus* and *Cantabrigiana*, *Calamita Alberti*, *Linosydis Petriknigge*, &c.; and above all, a *Kentia* which is quite unique, with eighteen leaves of 6 to 7 ft., hanging down in a dense mass.

Fruits, vegetables, and flowers were also shown, but there was nothing special in this department.

In the evening, the entrance of the Government building, vases and garden requisites were exhibited, whilst Messrs. SANDER filled the hall with rare and interesting plants. In the foreground of their collections stood a new and unique Palm, *Linosydis Leopoldi*, never shown before. An immense plant of *Monstera deltoidea*, in fruit and flower, attracted great attention from the general public. In the centre was a group of *Nepechima* and *Alseodora* plants always interesting. *N. mixta*, Sander's var., has longer pitchers than any other excepting *N. Rajah*.

On the right, a group of various new and rare foliage and flowering stove and greenhouse plants contained some 150 specimens. *Anturium*, both *Andromeda* and *Schezerianum*, were here in great variety, and *Isosiphon* (the singular), *Peperomia*, *Polka*, *Polka*, *Polka*, *Polka* (new), *Acalypha insipida*, on 3 feet stems, *Yucca*, *Crotons*, &c.

A group of new and rare Palms on the left contained some fifty varieties, including *Kentias* and other remarkable species. The end of this hall was filled with a magnificent display of *Orchids*. A dozen grand varieties of *Vanda coerulea* formed a beautiful group, and on the other side was the peerless *Cypripedium callosum* Sanderi, also some good *Lettia Cattleyas*, the

this fine Grape than of other varieties, as only two exhibitors competed in the class specially for it.

Two bunches of any other Black Grape.—In this class the variety *Albwick Seedling* was shown superbly by Mr. THOS. LESTER. The bunches were long and heavy, but these were not their best points, for in quality and finish they were perfect. The 2nd prize was won by Messrs. D. & W. BUCHANAN, with two unnamed bunches, besides Cooper's Black; and, W. H. DOBBIE, Esq., Dollar Mez, Dollar (gr. Mr. Jno. Waddie), with Gros Maroc. There were Muscat Hambourg, Cooper's Late Black, and others shown in this class, in which there were fourteen entries.

Two Bunches any other White Grapes.—The 1st prize was awarded to extremely large berried bunches of Duke of Buccleugh, shown by Mr. JOHN LESTER. The berries needed just a few more days to get the best colour; 2nd, Foster's Seedling, shown well by THOS. HINSHIELD, Esq., Kenyhill House, Glasgow (gr. Mr. Peter Young); 3rd, also Foster's Seedling, from Mr. JAMES DAVY. The varieties *Raisin de Calabre*, Empress of India, a new variety referred to above, *Chasselas Napoleon*, and *Canon Hall Muscats* were also shown in this class, in which twelve entries were made.

One Bunch of a White Grape.—Prizes were offered in this class for the heaviest bunch shown, and the 1st prize went to a bunch of *Graciosa*, weighing 8 lb., shown by Mr. JOHN LESTER; 2nd, to A. A. WALLACE, Esq., Houston House, Johnstone (gr. Mr. James Brown), who had *Trobbiano*.

One Bunch of a Black Grape (earliest).—Mr. JOHN LESTER also won 1st prize in this class, and showed a wonderful bunch of *Alicante*, which weighed 8 lb. One of the shoulders was quite as large as a fairly-sized bunch of this variety. The berries were also of good size, hardly well coloured, but by a little thinning the bunch could be made to appear very satisfactory for so heavy a specimen; 2nd, Messrs. D. & W. BUCHANAN, with unnamed bunch (probably *Alicante*), weighed 6 lb. 2 oz.; 3rd, Sir D. C. BUCHANAN, Drumpepher, Coatbridge (gr. Mr. A. Aiklen), who also had an unnamed bunch.

MELONS.

The best three fruits of a green or white-fleshed Melon were of the variety "Best-of-All," shown by D. SCOTT FERGUSON, Esq., Thayston, Kirtoukirk (gr. Mr. Thos. Christie), they were small fruits, in perfect condition, and of good flavour. The 2nd prize was won by Mr. LESTER, whose fruits were distinct, and included the varieties *Hero of Lockinge*, *The Countess*, and *Royal Sovereign*; 3rd, the Earl of HOME, K.T. (gr. Mr. W. F. Archibald).

The best scarlet-fleshed Melons were *Scarlet Premier*, shown by Mr. JAS. McINDOE; whilst *Kingdike*, from Mr. THOS. CHRISTIE, was 2nd.

Figs.

The best Figs shown came from so far south as Goodwood, being shown by Mr. R. Parker, gr. to the Duke of RICHMOND AND GORDON; they were some of the largest fruits of Brunswick we have seen; 2nd, Mr. JAS. DAVES, also from the south; and 3rd, Mrs. JOHNSTONE, *Combe Cottage*, Kingston-on-Thames (gr. Mr. David Gibson).

PEACHES AND NECTARINES.

There was a first class show of these in four classes. The 1st prize for twelve fruits in two varieties was won by A. CAMPBELL, Esq., Craigie House, Ayr (gr. Mr. Robt. Blair), who had magnificent specimens of *Prime of Wales*, and good ones of *Bellegarde*; 2nd, Mr. RICHARD PARKER; and 3rd, J. A. WALLACE, Esq., Bridgend Cottage, Cairnryan (gr. Mr. Wm. Downie).

The best dish of six fruits was shown by Mr. Robert GRINDROD, gr. to G. BATES, Esq., Whitfield Gardens, Hereford, who showed very large fruits of *Sea Eagle*; 2nd, the Earl of CAIRNROY, *Hughlere Castle*, Newberry (gr. Mr. W. Pope); and 3rd, Mr. D. BUCHANAN.

The best dozen Nectarines was from Mr. THOS. LESTER, and they were some of the best developed, highest coloured specimens of *Eldrige* and *Pine-apple* we have ever held; 2nd, Mr. DAVID GIBSON, with the same varieties; and Mr. DAVID MURRAY, with *Spencer* and *Pine-apples*. These exhibitors were awarded equal 2nd prizes.

APRICOTS AND PLUMS.

The 1st prize for twelve fruits of Apricots was won by Mr. W. Smith, gr. to the Earl of STRATH, *Oxenford* Castle Gardens, Dalketh. These were the only samples shown.

The best dozen of Gage Plums was shown by Mr. JAMES DAVES, who had very large and excellent specimens of the variety *Jellison*; 2nd, Mr. W. POPE, with *Raynston Gage*; and 3rd, Mr. DAVID GIBSON, with *Green Gage*.

The best yellow Plums were magnificent specimens of *White Magnum Bonum* from Mr. POPE; 2nd, Earl of LONDON, *Galston* (gr. Mr. J. W. Robertson), with the same variety; 3rd, Mr. JAS. McINDOE, also showing the same variety.

For red or purple Plums, the best was *Kirke's Seedling* from Mr. ROBT. BEATTIE; 2nd, Mr. W. SMITH with *Pond's Seedling*; and 3rd, JSD. MALCOLM with *Victoria* and *Kirke's Seedling*.

PEARS.

The best three dishes of Pears, distinct, grown in the open air, came from H. J. YOUNGER, Esq., Benmore, Kilnmuir (gr. Mr. Robt. Greenlaw), who showed *Doyenne du Comice*, *Pittaston Duchess*, and *Beurré d'Amanlis*; 2nd, Mr. JAS. GIBSON; and 3rd, Mr. W. ROE, gr. to E. W. CRODICK, Esq., *Caradair, Ross*.

The best three dishes of Pears cultivated under glass were shown by Mr. THOS. GORDON, gr. to WALTER NEILL-ROSS, *Evenfield, Ayr*, who had very nice and nearly ripe fruits of *Magnate*, *Louise Bonne de Jersey*, and *Durondeau*; 2nd, Mr. ROBT. GREENLAW; and 3rd, Mr. D. KIDD.

In the larger class, for twelve dishes of Pears in twelve varieties, there were numerous collections of good fruits. The 1st prize was won by Mr. THOS. GORDON, who showed *General Tollehen*, *Beurré dié*, *Marie Louise d'Uccle*, *Beurre Bose*, *Durondeau*, *Beurré d'Amanlis*, *Louise Bonne de Jersey*, *Doyenne du Comice*, *Magnate*, *Conference*, *Beurré Superin*, and *Clapp's Favourite*. The 2nd prize was awarded to Mr. ROBT. GRINDROD, and the 3rd to Mr. JAMES McINDOE.

APPLES.

Were shown numerously, and generally they were good. The 1st prize for a collection of twelve distinct varieties was won by Mr. ROBT. GRINDROD (Hereford), who had capital fruits of fine colour and considerable size; 2nd, Mr. DAVID GIBSON, *Kingston-on-Thames*.

In a class for twelve varieties of culinary sorts, Mr. RICHARD PARKER won 1st prize with very large fruits; 2nd, Mr. Jno. Kelly, gr. to CAMPBELL & GETTING, *Gleweston, Ross*; and 3rd, Mr. ROBERT GRINDROD. There were twelve entries in this class, and two equal 4th prizes were awarded in addition to the collections referred to above.

The best collection of six dishes of dessert Apples came from Mr. John Kelly, gr. to CAMPBELL & GETTING, *Ross*, and he showed very finely coloured fruits of *Lady Sudeley*, *Warrington*, *CON'S Orange Pippin*, *Beauty of Bath, &c.*; 2nd, Mr. DAVID MERRIA, *Ayrshire*; and 3rd, Mr. JAMES DAVES, *Leadbury*. There were fifteen entries in this class.

COLLECTIONS OF VEGETABLES.

There were numerous collections shown in a class for the following thirteen varieties, the chief inducement being a Veitch Memorial Medal and £5 offered by the trustees of the Veitch Memorial Fund. None but gardeners and amateurs could compete. The collection was required to include dishes of six Cauliflowers, six heads of Celery, six Leeks, six Parsnips, six Carrots, six Beet, six Turnips, four early Cabbages, two Vegetable Marrows, twelve Onions, twelve Potatoes, fifty pods of Peas, and fifty pods of French Beans. There were as many as fifteen entries in this class, and the 1st prize was won by Mr. CHAS. TRAILL, gr. to JSD. MARSHALL, Esq., *Asbridge, Kilwinning*. He had good *Lion Giant Leeks*, *Winningsdale Cabbages*, *Veitch's Autumn Giant Cauliflower*, *Moor's Cream Marrow*, *Miller's Beautiful Potato*, *Crauston's Excelsior Onion*, fine *Golden Ball Turnips*, *Celery, &c.*; 2nd, Mr. JAS. BROWN, gr. to A. A. SPERS, Esq., *Houston Gardens, Johnstone*; 3rd, Mr. James Dymock, gr. to WENTWORTH VERNON, Esq., *Stoke, Stoke Braemar Park, Towcester*; 4th, E. Beckett, gr. to Lord ALDENHAM, *Elstree House Gardens, Hertfordshire*.

In a similar class for which prizes were offered by Messrs. SUTTON & SONS, Reading, the 1st prize was won by Mr. JAS. GIBSON, gr. to R. H. HUDSON, Esq., *Dunstable, Marlow, Bucks*. This was a grand collection, and included *Pritzaker Leeks*, *Standard Bearer Celery*, *Sutton's Autumn Mammoth Cauliflower*, *Tender and True Cabbage*, *New Intermediate Carrots*, *White Vegetable Marrow*, *Ailsa Craig Onions*, *The Student Parsnips*, *Sutton's Satisfaction Potato*, *Duke of Albany Peas*, *Spawhall Turnips*, *Canadian Wonder French Beans*, and *Sutton's Black Beet*; 2nd, Mr. Jno. Waddie, gr. to W. H. DOBBIE, Esq., *Dollar*; and 3rd, Mr. James Brown, gr. to A. A. SPERS, Esq., *Houston House, Johnstone*; 4th, Mr. W. POPE.

A smaller class for nine dishes of vegetables was won by Mr. JOHN GEMMELL, gr. *Flakfield, Chapelton*, 2nd, Mr. HUGH WATSON, *Crossford, Carlisle*; and 3rd, Mr. COLIN K. MACPHEIL, *Ardeer House, Dumbarton*.

There were plenty of Potatoes shown, and a large number of good tubers were staged in a class for twenty-four varieties. The best lot was shown by Mr. JOHN GEMMELL, gr., and the tubers were remarkable for a clean appearance and good even size; 2nd, Mr. JAS. SEBRICK, *nurseryman, Maxwellton, Dumfries*.

The best collection of twelve varieties of Potatoes came from Mr. ALLAN CALDWELL, gr., *Hill Hill, Polmont*. These were also very good indeed; 2nd, Mr. JAS. BROWN, gr. to A. A. SPERS, Esq., *Houston House, Johnstone*; and 3rd, JESSIE GENTLEMAN, *Craigmarrie, Armadale*.

There was a special competition for flavour in Tomatos, and in this class the winning fruits were *Dobbie's Champion* and *Holmes' Supreme*, both red varieties, shown by Mr. James Martin, gr. to Mr. SWINBURNE, *Wincheombe*.

A splendid collection of Tomatos was shown by Mr. HUGH BENNIE, *Looms Nurseries, Troon*; a large number of dishes of medium-sized fruits of good *Perfection* shape were shown amidst a groundwork of *Smilax* foliage; 2nd, Mr. John Hood, gr. to T. G. BISHOP, Esq., *Dalmore, Helensburgh*; and 3rd, Mr. ROBERT MORTON, *Braidwood, Carlisle*.

Carrots, Beet, and Parsnips.—The best exhibit of six roots of each was shown by Mr. W. HEWITT, *Temple Saw Mills, Glasgow*, and the comparative quality of his roots may be judged when it is known that there were thirty-four entries in this class; 2nd, Mr. W. Downie, gr. to J. A. WALLACE, Esq., *Cairnryan*; 3rd, Mr. James Hattie, gr. to JAMES MANN, Esq., *Orchard House, Carlisle*.

In the smaller classes the vegetables were of generally good quality, and the following were the principal prize-winners:—For *Cucumbers*, Mr. W. POPE, Mr. John Wood, gr. to T. G. BISHOP, Esq., *Dalmore, Helensburgh*; *Tomatos*, Mr. JOHN WADDIE and Mr. JOHN WOOD; *Onions*, Mr. ED. BECKETT, who had immense specimens, and Mr. ROBT. F. KAK, *Guthlows, Roxburgh*; *Leeks*, of which a very large number was shown, Mr. JOHN HOOD, and Mr. DAVID PITT, *Eccles, Kelso*; *Celery*, Mr. James Miller, gr. to Mr. C. S. STUART, *Castlemilk, Rutherglen*; and Mr. E. BECKETT.

NON-COMPETITIVE EXHIBITS.

Messrs. LISTER & SON, *Rothsay, N.B.*, showed a large quantity of Tomatos of the variety *Lister's Prolific*. There were thirteen whole plants cut off at ground level, bearing an exceedingly prolific crop of fruits, also numerous bunches of fruits, and gathered fruits upon plates. The variety is a red one, of good *Perfection* shape, and remarkable for its abundant cropping qualities.

Messrs. SMITH & SIMONS, 36 and 38, *West George Street, Glasgow*, exhibited a collection of fruits, including Apples, Peas, Peaches, Tomatos, Grapes, Apricots, Plums, &c. From the same firm was shown a group of ornamental foliage plants.

Messrs. DOBBIE & Co., *Rothsay*, in addition to refurbishing their permanent exhibit in the exhibition with fresh vegetables and cut flowers, also showed Tomatos, in thirty varieties, and a number of ornamental Gourds. A variety of the *Curran Tomato*, with racemes of fruit more than 2 feet long, and some with three branches, formed part of this exhibit.

A magnificent collection of Grapes, grown in the *Channel Islands*, was shown by Mr. FRED LE POIDEVIN, *La Porte, Catel, Guernsey*. These were shown as packed for market in cross-handled baskets, there being four baskets of *Black Alicante*, two of *Hamburg*, and one of *Muscats*. There were also good Melons and Tomatos.

Very much larger quantities of Grapes, also from *Guernsey*, and packed similarly in baskets, were shown by Mr. JAS. GATTENS, *The Bazaar, Glasgow*; Mr. ROBERT LEPPIN, *Condleriggs, Glasgow*; Messrs. L. & H. WILLIAMS & Co., *Bazaar, Glasgow*. In this case the origin of the Grapes was not stated, but presumably they were grown in the *Channel Islands*.

Messrs. STROX & SOSS, *Reading*, made a very imposing exhibit of horticultural produce, representative of the specialties of the firm. The exhibit took the form of a great ground in the centre of a large fruit tent, and had a promenade all around it. At the top of the mound were Palms, and a number of varieties of *Lilium speciosum*; also excellent *Salpiglossis*, very rich in their colouration; *Tydeas*, *Achimenes*, variegated *Maize*, *Begonia Gloire de Lorraine*, *Asters*, &c. Then below, on shelves, there were pots of *Lilies of the Valley*, *Chinese Asters*, *Dianthus*, *Begonia Gloire de Lorraine*, tuberous-rooted *Begonias*, *Gladioli*, cut flowers of varieties of herbaceous *Phlox*. Of vegetables, there were fine Tomatos, red and yellow; Onions, Celery, Leeks, Beets, Parsnips, Carrots, Beans, Marrows. There

were also good Melons. The whole exhibit was furnished with a delightfully green edging of Sutton's Lawn-grass, shown in small boxes.

Messes. GEO. BRYNARD & CO., Maidstone, showed a collection of seventy dishes of hardy fruits, amongst which were noticed grand examples of the following Apples:—Peagood's Nonsuch, St. Edmund's Pippin, Duchess Favourite excellent in colour, Ecklinville seedling, Duchess of Oldenburg, James Grieve's the prettiest Apple in the exhibit, Worcester Pearmain, James Welsh, Arlington Pippin (very fine), Lady Sudeley, Gold Medal, Early Rivers, and Cellini Pippin. The best Pears included Souvenir du Congrès, Williams-Bon Chrétien, Clapps Favourite, Dr. Jules Guyot, Marguerite, Marillac, Grégoire Bourdillon, &c. There was also a selection of Grapes, a few Plums, &c.

Exhibits of fruits and vegetables were made by Messrs. ALEX. CROSS & SONS, Ltd., 19, Hope Street, Glasgow; and the LUTHERIC GRASS CO., Ipswich, for the purpose of showing the effectiveness of their respective artificial manures.

The SCOTTISH MUSHROOM CO., Edinburgh and Dundee, exhibited three dishes of Mushrooms grown in the well known Scotland Street Tunnel, Edinburgh. The samples were first-class, and as clean looking and more heavy than good field Mushrooms.

Messes. CAMPBELL & GETTING, Glasgow Fruit Plantation, Ross, Herefordshire, exhibited through their agents Messrs. SIMONS, JACOBS & Co., Glasgow, a quantity of Apples of the varieties Warner's King, Lord Sudeley, Worcester Pearmain, Ecklinville Seedling, and Lane's Prince Albert.

Messes. D. & W. BUCHANAN, Forth Vineyards, Kippen, exhibited a fine collection of Grapes, and among them several new varieties, such as Diamond Jubilee, with Cooper's Black and Black Morocco for comparison. Empress of India, having large bunches with long berries, in shape something like Black Morocco, colour greenish-yellow, tinted with red towards end of berry, and Queen Victoria, a very large-berried white Grape, which promises to be a good variety. The bunches shown needed rather better colour, which probably they would attain to with a little longer period to ripen. We cannot speak for the flavour of these new grapes, but are alluding only to their appearance. The bunches of Diamond Jubilee shown had berries less long than Black Morocco, but rather longer than the round berries of Cooper's Black, and the bunches were not quite the same in shape as those of Black Morocco. The berries of Diamond Jubilee would appear to have something of the character of Madresfield Court in them. Whether or not it is distinct from all black Grapes, it seems to be cultivated more easily and colours more quickly than does Black Morocco, at any rate at Kippen.

Awards
Were made as follows:—

SPECIAL AWARD OF MERIT.
Sutton & Sons, Reading.
Geo. Bunyard & Co., Maidstone.
Dobbie & Co., Rothsay.
Alex. Lister & Son, Rothsay.
D. & W. Buchanan, Kippen, and to a grower of Grapes in Gurnessy.

HIGHLY COMMENDED.
Smith & Simons, Glasgow.
Campbell & Getting, Ross.
Alex. Cross & Sons.

MARKETS.

COVENT GARDEN, SEPTEMBER 5.

Table with 2 columns: Item and Price. Includes plants in pots like Adiantums, Ferns, and various flowers like Carnations and Tulips.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

Table with 2 columns: Flower type and Price. Includes Asparagus Fern, Carnations, Cattleya, and various lilies.

FRUIT.—AVERAGE WHOLESALE PRICES.

Table with 2 columns: Fruit type and Price. Includes Apples, Grapes, Figs, and various berries.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

Table with 2 columns: Vegetable type and Price. Includes Artichokes, Beans, Cabbages, Carrots, and various leafy greens.

REMARKS.—Only a few Coburns make 2s. per dozen, and only a few Coburns 7d. per lb. Plums in variety, from 9d. per sieve or half bushel, these comprise Egg Plums, Victorias, Primes, Black Diamond, and others. Maze Cobs 1s. per dozen. Supply plentiful; the demand however is slow.

POIATOS.

Bedfords, and others, 6s. to 7s. John Bath, 3s. 6d. 21, Wellington Street, Covent Garden.

ENQUIRIES.

"AMERICAN PLANTS." How is it that this expression has come in common parlance in England to mean Rhododendrons, Kalmias, and a few pret-lying plants? Where could such a curious synecdoche have originated? Vermont.

NURSERY WORK IN SOUTH AFRICA.—Will the writer of an article on South Africa which appeared in the Gardeners' Chronicle last October, under the signature of "D. G. Ricard, London (late of S. A.)," kindly give Gerald W. Davidson his present address, or that of anyone likely to afford him information about nursery work and prospects in that country?



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period August 25 to August 31, 1901. Height above sea level 24 feet.

Table with multiple columns: Date, Direction of Wind, Temperature of Air, Temperature of Soil at 9 A.M., Rainfall, etc. for days from Sun 25 to Sat 31.

Remarks.—The first part of the week was wet and stormy, the latter part fine but dull, with cool wind, and a heavy rain on the 31st.

THE WEATHER IN WEST HERTS.

The past week has been, on the whole, cool for the time of year. The temperature in shade on no day rose higher than 68°, and on the coldest night the thermometer exposed on the lawn fell to within 6° of the freezing point. The soil temperatures have declined, but are still respectively 2° and 1° warmer at 1 foot and 2 feet deep than is reasonable. Rain fell on two days, but on each occasion the amounts deposited were only sufficient to moisten the surface of the ground. The effect of the previous week's rain is, however, apparent in the percolation through the bare soil gauge, which amounted to 1½ gallons during the week. The sink shown on an average for nearly six hours a day, which is a good record for the time of year. The air has been cooler than for any week since the end of July.

AUGUST.

There have been only three Augusts in the last sixteen years which were warmer than the past month. This is rather surprising, for although the days were, as a rule, warm, the night temperatures, on the other hand, continued with low exceptions low for the time of year. Only once before (1899) in the same sixteen years has the soil at 2 feet deep been as warm. At 1 foot deep, however, the warmth was not as exceptional. No doubt the great heat in July, and the depth to which it penetrated the ground, was, in some measure, accountable for this. Although the total rainfall fell short of the average for the month by only about half an inch, this August must, I think, as regards its effect on vegetation, be regarded as a very dry one. The fact is, only about one-third of this total fell (equivalent to a watering of less than 3 gallons on each square yard of surface was deposited during the whole of the first twenty-four days. The sun shone on an average for 77 hours a day, or for nearly two hours a day longer than usual. The winds were, as a rule, singularly light, indeed, it was not until after the 25th that the mean rate of movement of the air exceeded in any hour 15 miles. At no time, taking the month as a whole, was dry.

THE SUMMER.

This was a very warm, dry, and exceptionally bright season. The only two summers in the last sixteen years in which the duration of sunshine has been greater were those of 1887 and 1899. J. M., Berkhamstead, Sept. 6th, 1901.

ANSWERS TO CORRESPONDENTS.

BOOKS: *A. B. Fruit Farming for Profit*, by Mr. Geo. Bunyard, nurseryman, Maidstone (F. Bunyard, 29, Week Street, Maidstone). *Fruit Culture under Glass*, by W. Thomson (Blackwood & Sons, Edinburgh and London). *Floral Decorations for Dwelling Houses* may be met with at the second-hand booksellers.

CATERpillars: *C. B.* We find no trace of them here.

CHRYSANTHEMUM SHOOTS: *A. Young Gardener*. Please send further specimens. We cannot see anything wrong.

CORRECTIONS.—In our report of Reading Show, appearing in our last issue, Mr. C. Sage, gardener at Dropmore, Maidenhead, gets the credit of obtaining a 2nd prize for six dishes of fruit. Mr. Sage now writes to say that his ticket from a dish of Peaches got put upon this lot of fruit, hence the mistake made by our reporter.—On p. 172 of our last issue, near the bottom of the left-hand column, under "Awards of Merit," it is stated that *Laelio-Cattleya Robin Measures* var. *Ena* came from Mr. Measures; this is not correct, as the plant belonged to Messrs. J. Veitch & Sons, Ltd., and was shown in their group.

CECILIA LEAVES SPOTTED: *J. H.* and *H. Jackson*. The spots are probably caused by drip; from being sprinkled with some irritating liquid; or from being exposed to the fumes from water impregnated with artificial manure of some kind, sprinkled on the hot-water pipes; and perhaps by faulty ventilation, or some other point in the cultivation which has not been what it should be. Similarly injured leaves have been common this year.

CURBANT LEAVES: *J. T. S.* We find no insect or fungus, and infer that your leaves have been scorched by the sun, perhaps when "wet with dew or rain."

DISEASED BRENDAIA: *Correspondent*. The injury is caused by a fungus, *Gleosporium lineolatum*, Sacc., which is often very destructive to various Anaryllidaceous plants. It is most frequently present on newly imported plants along with which it presumably comes. Washing the scapes with soft-soap and potassium sulphide checks the spread of the fungus. Stems that are destroyed by the disease should be burned. *G. M.*

GLOBE ARTICHOKEs: *Jackson*. The flower-heads must be cut for culinary purposes before they open. The surest guide in this matter is the condition of the stalk just below the flower-head; for if this be brittle and very readily cut through or snapped across, the head is well grown and fit for use; if, on the contrary, it is in the least degree tough and woody, the head will be stringy and poor eating. Globe Artichokes need large quantities of manure and manure-water in order that the plants may make quick growth, and the heads be juicy and succulent.

EARLY PEARS GOING SLEEPY: *M. B. M. Jargonelle*, William's Bon Chretien, Summer Pear, Reat, Souvenir du Congrès, and Clapp's Favourite, should be gathered as soon as the flesh can be indented by very slight pressure of the thumb applied about half an inch down from the stalk, and the fruit should be eaten within one or two days from the time of gathering. As soon as a Pear on being raised by the hand parts from the stalk it is, if of these varieties, in a proper condition for eating, and there is no need to indent it.

GRASS: *G. D. W.* The grass is the Cocksfoot *Dactylis glomerata*, which generally occurs when the soil is too rich in nitrogen, therefore do not apply farmyard-manure or nitrate of soda or ammonia. A dressing of kainit (potash), or basic slag (phosphatic) would be beneficial. Unfortunately, the same manures which would be prejudicial to the Cocksfoot would favour the Clover. If the Cocksfoot

grass is not very abundant, it might be spudded out, the holes filled in with loam, and re-sown with seeds of the finer grasses, or mended with fine turf.

LAYERS OF LAUREL, ACCURAS, DAPHNE, ARBOR VITAE: *C. B.* They will not be fit for removal from the plants in less time than one year; the last two probably in not less than eighteen months or two years.

LIME-TREE LEAVES: *T. R.* The Nail Gall, the work of a mite. It may or may not spread on the trees, and may disappear for a number of years. There is little probability of the galls increasing in number this year.

NAMES OF FRUITS: *G. P.* Mère de Ménage.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*E. C. P. D.* *Loasa hispida*, introduced from Lima in 1830; an annual.—*No letter, specimen tied into a cigar-box, post mark Stanmore.* *Tecoma radicans.*—*J. H. O.* *Tropaeolum speciosum.*—*J. S.* *Rhamnus catharticus*, the common Buck Thorn. It makes good underwood and hedges, but we do not know whether the berries act in the same way on birds as they do on human beings.—*Jackson.* Herbs, not "weeds." 1, *Origanum vulgare*, Majoram; 2, *Melissa officinalis*, Balm; 3, *Artemisia Dracunculoides*, Tarragon; 4, *Rosmarinus officinalis*, Rosemary; 5, *Marrubium vulgare*, Horchound; 6, a Labiate herb, too much withered to be recognisable.—*R. C. B.* *Rubus lasiocarpus* Sm.—*T. W. R.* *Ciothra albidifolia.*—*An Assiduous Reader, Geneva.* Not Yarrow, but *Potentilla reptans.*—*J. T., Durlford.* *Cattleya Gaskelliana.*—*E. E. J.* 1, *Platyloma falcatum*; 2, *Asplenium bulbiferum*; 3, *Cyrtium caryotidum*; 4, *Onoclea sensibilis*; 5, *Polystichum angulare*; 6, *Polypodium venosum.*—*C. Fildesol.* 1, *Phaius bicolor*; 2, *Anthericum lineare variegatum*; 3, *Asparagus tenuifolius*; 4, *Asparagus plumosus.*—*P. W., Maylebury.* The one is a very finely coloured *Cattleya intermedia*, and the spotted one is known in gardens as *Cattleya intermedia punctatissima.*—*E. S. R.* 1, *Salix*, perhaps *S. viminalis*; 2, *Tsuga canadensis*; 3, *Chelone barbata*; 4, *Polypodium vulgare*; 5, *Lastrea filix-mas.*—*F. B. B.* *Abelia triflora.*—*Windsor.* 1, *Berberis dulcis*; 2, *Spiraea opulifolia*; 3, *Dentzia crenata*; 4, *Spiraea japonica*; 5, *Cornus sibirica*; 6, *Spiraea confusa.*—*J. R., Wantage.* Omitted last week—*Sambucus racemosa.*

POTATO MALFORMED: *H. Turner*. It arises from injury to the "chats," and consequent production of adventitious buds.

SAMPLE OF MELON SOIL: *Caetus*. The sample is not what we should call a "good" Melon soil, being too friable and light. Some clayey loam would improve it as a Melon soil, it added to the extent of one-sixth. In any case, soil of the description of that which is sent would have to be made very firm. It would answer well for Melons in pots, as then it would be practicable to ram it firmly.

SEEDLING HEALTH: *A. W. S.* The common ling, *Calluna vulgaris*, which has come up from seed in the peat.

SHRUB FROM A WELSH ABBEY: *A. Workshop*. *Staphylea pinnata*, Job's Tears, St. Anthony's Nut. It is a shrub rather than a tree. The plant is a native of the South of Europe; and we should much doubt if the monks brought seeds of the plant from Nineveh to this country in the middle ages. If you wish to sow the seeds, do so now, or in October, in loamy soil in pots or seed pans, and keep in a cold pit, and they will germinate in the spring. The soil must be kept moderately moist.

SMALL VEGETABLE GARDEN: *F. W. K.* A totally inexperienced amateur should, when he has entered on possession in September, trench the land; it will doubtless at the place named allow of this being turned up two spits deep and the shovellings; but if it be very sandy, gravelly, or a very stiff clay, be satisfied with one spit (a good one) for

one or two years. Beyond heavily manuring and digging, but little can be done before February, unless you sowed Broad Beans in November, and planted late sown Cabbages, and hardy Brown Bath Cos, and Hammer-smith, and all the year round Cabbage-lettuces. If the house and land are your own, you should plant fruit-trees as espaliers and cordons, and fruit-bushes (small fruits). Strawberries might be planted, and they would get established before the winter, but there would be no fruit from the plants before the summer of 1903. If you fancy flowers in the garden, plant as soon as you can Hyacinths, Crocus, Snowdrops, Scillas, Tulips, Daffodils, and Narcissus, Anemones, Ranunculus, and obtain some plants of *Myosotis sylvatica*, Wallflowers, Silene pendula, Canterbury Bells, Evening Primroses, &c. More and more varied plants can be got in February. We would, however, advise you to obtain our *Cottagers' Calendar* of the publisher, price 3s., which will afford just the information needed.

TOMATOS: *G. A.* The "sleepy disease," for which we know of no cure.—*R. M. B. S.* No fungus or insect, but the result of faulty cultivation, which has doubtless affected the other plants in the house that you have specified.

VARIETIES OF ASTERS THAT CHANGE COLOR AS THE BLOOMS AGE: *O. P.* Why not Chameleons Asters?

VINES: *G. A.* The leaves show warts, due to want of balance between the moisture in the air, and the ventilation. No phylloxera.

WEED ON LAWN: *C. B.* The plant is *Prunella vulgaris*. It is generally an indication of poverty of soil. Try a top dressing of manure in the winter, or apply in spring any fertilizer, such as sulphate of ammonia in small quantities, that will encourage the grasses.

WILLOWS TO REMAIN A RIVER BANK: *Alpha*. If the banks are much undermined by the action of the water, they should be protected by wooden slabs set on end, or by means of faggots with stout stakes driven into the river bottom in the front of or through them. Having done this, cuttings of the yellow-skinned Willow, made 1 to 5 feet in length, and consisting of at the least two-year-old growth, should in the winter be dropped into holes made with a crowbar at 12 feet apart, 2 feet deep, and a yard back from the edge of the stream; or at 1½ feet apart thrust into the face of the bank, and allowed to grow together so as to form a hedge. Plant brushwood and reeds against the bank where the erosion is greatest. If the Willows that are planted a yard distant from the river be allowed to grow to tree size, they can be pollarded every fourth or fifth year. The common Willow is also a very suitable plant.

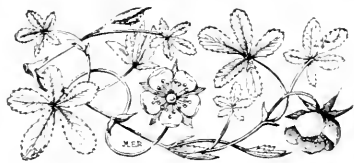
WOOLICE AND WALL-FRUIT: *T. M.* To endeavor to lessen the plague of woodlice without first filling up their hiding-places in the walls is almost wasted labour. We cannot advise you to use other than the means you have hitherto used, and to set traps for them of slates, tiles, boards, &c., raised above the ground about a ½ of an inch, examining these every day, and scraping off the insects found on the damp under-surfaces into a vessel containing scalding water. In the autumn let the walls be freshly pointed on both sides.

COMMUNICATIONS RECEIVED.—*H. Bowles*, letter forwarded to the secretary.—*H. Havelock*—*E. M.*—*R. J. A. R.*—*D. W. K.*—*S. A.*—*E. J.*—*Harrison*—*Wen*—*R. Newstead*—*D. R.*—*Untraveled*—*W. P. R.*—*E. C.*—*Subscriber*—*R. I. C.*—*J. K. K.*—*J. Kers.*—*C. J. K.*—*R. C.*—*W. R. L.*—*J. F.*—*E. W.* & Sons.—*J. L. Chung*.

MARRIAGE.—*DEAN—CLARKE.*—On Aug. 27, at St. John's Church, Penzance, by the Rev. Theodore Wood, Ernest William Dean, of Buenos Ayres, eldest son of Richard Dean, of Ealing, to Charlotte Alice, youngest daughter of Mrs. Emma Clarke, of Penze, and the late Alexander Clarke, R.N.



GROUP OF FERNS, SHOWN BY J. HILL AND SON, EDMONTON.



THE
Gardeners' Chronicle
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THE FOOD OF SOME BIRDS INHABITING AN ORCHARD.

THESE remarks are exclusively confined to observations made during the month of August, the locality selected was a typical old turf-covered orchard, chiefly of elder fruit, situate in the West of England, about five acres in extent, and well isolated from the farm premises to which it belonged. It is only fair, therefore, to assume that the food obtained by the birds was only such as was provided by nature. The trees were all of them very old—possibly a hundred years. The majority of them had long since seen their best, and some had quite decayed, and the limbs were stripped of their bark by woodpeckers. Many, however, were the pictures of health and vigour, although they bore scarcely any fruit. The dense foliage of the "Huff Cap" Pear, and the thick old hedges which bounded the orchard on two sides, afforded excellent retreats and roosting places for the birds. The only plants of importance which grew beneath the trees were the grasses which formed the turf, and the Dog's and Marsh's Thistles, which were thickly dotted amongst

it. The Brambles were ripening in the hedges, and there were also fruits of the Elder and Dogrose. The grass had been grazed by cattle, and their dung was lying here and there throughout the field.

In this comparatively small retreat eleven species of birds could generally be seen and heard at any time of the day; and there were, besides, occasional visits by other birds; but my observations will be confined to those species which were more or less residents of the orchard.

Provided with an excellent pair of Triller binoculars, I sat beneath the shade and watched the habits of the birds. Some were busy in the trees and hedges, others among the grass; but one and all seemed bent on the one object—the almost ceaseless search for food. What was it they found to eat? was the one question I wished to solve. Insects, I presumed. But this was too vague, and I set myself the task of going the round of trees, grass, thistles, and dung, "beating" the branches produced very little indeed; there were scarcely any caterpillars, but a few plant-bugs and an occasional weevil fell to my net. The thistles, however, attracted the common species of humble bees; the numerous soldier and sailor beetles; edible weevils; and numbers of a beautiful little flea-beetle, of the most brilliant coppery-red, sweeping the grass—produced hundreds of two-winged or dipterous flies of the house-fly type, and also weevils of the genus Sitones and Otiorynchus; while deep down in their burrows under the dung were scores of large dung-beetles, and nearer the surface were many of their smaller relations. Wasps, too, were unusually abundant; but the only nest, near the orchard, was one night unearthed and eaten by a badger.

So far this was satisfactory; but how could one tell which of all these, or what other insects were eaten by the birds? Only one course was open, that of making *post-mortem* examinations when it was otherwise impossible to tell. And although I dislike taking the life of a bird, I trust that those which fell to my gun may serve to enlighten us as to the exact nature of their food. Of the commoner species, two examinations were made of each; of the rarer species only one, the results of which are here given:

SO-SO THRESH (Turdus musinus, Lin.). This species was unusually common; on one of my visits I counted over thirty individuals in one portion of the orchard. I also found them equally abundant elsewhere in the district, but they seemed more particularly attached to the older orchards. They were chiefly birds of the year, and, like their congener the Blackbird, were remarkably shy. They fed chiefly out in the open, but on the slightest alarm flew up into the trees, where they could scarcely ever be detected. Two examples were found to have fed upon the following: Many maggots of small flies; grubs of small moths; weevils; ants; a small species of land-shell; and wire-

worms. Most of these are more or less noxious species, and the wireworm is of course a great enemy to the horticulturist as well as to the agriculturist, and it is quite refreshing to find it has a new enemy in the thrush.

BLACKBIRD (Turdus merula, Linn.). This persistent fruit-robber, which has won for itself a name of unenviable notoriety, was not quite so numerous as the preceding species, but was very common. One of the two examples examined had the stomach filled with pieces of hard, unripe Pear. I also found the following insects: Numerous remains of weevils; earwigs; two species of ants; one caterpillar of a noctuid moth, and the remains of a humble-bee.

As there was no water near at hand, it is just possible that the Pear had been taken in lieu of it. I am quite certain their attack on the fruit was not general, as I failed to find any trace of injured fruit in any part of the orchard excepting in one instance, and this was attributable to the rook. The weevils and the earwigs may be classed among the worst of pests. Almost all kinds of insectivorous birds devour the former, but the latter has, so far as my experience goes, decidedly fewer enemies, and it is at least interesting to know that the blackbird devours it. Previously I had never known the blackbird to eat bees, and the record is of interest.

FLY-CATCHER (Musciopora grisola, Linn.). There were at least two families of this useful little migrant, and it was equally common in an adjoining orchard. The habit of this species is to perch itself upon some conspicuous place in the orchard, generally a comparatively naked branch projecting below or beyond the rest. In such places it awaits a passing insect, which it invariably takes upon the wing, returning again and again to its place of vantage. I have occasionally seen it give chase to a butterfly, but never saw it make a successful capture. Not that the bird had any difficulty in overtaking the insect, but when apparently within easy reach it seemed to hesitate, as if there was something to fear, and the insect invariably escaped. One of the specimens examined contained a humble-bee, and there were besides numerous minute fragments of other undeterminable insects. The second example contained wasps; fragments of ichneumons, and a blow-fly. Truly an extraordinary mixture, and not only of economic importance, but also of great biological interest. Here, I believe, we have the first recorded instance of a British bird feeding upon wasps. How far they enter into the dietary of this bird it is not possible to say. There can be no doubt, however, that wasps form part of its regular food supply, as the bird could not have been pressed by hunger to eat the wasps, seeing that other orders of insects were swarming at the same time. At first sight the blow-fly does not appear of much importance, but when we come to consider the ravages its larvae inflict upon sheep, often with loss of life, we may be thankful it has at least one natural enemy besides man, R. X.

(To be continued.)

- | | |
|---|-------------------------------------|
| 1 Rubus sp. | 10 Crepidodera sp. |
| 2 Sambucus nigra | 11 Geotrupes stercora |
| 3 Rosa sp. | 12 Rhus and spinger. |
| 4 Sitones sp., Phyllonotus sp., and Polydrusus. | 13 Diptera. |
| 5 Bombyx terrestris and Lepidurus. | 14 Mero Lepidoptera. |
| 6 Telephorus rusticus and lividus. | 15 Otiorynchus sp., &c. |
| 7 Sitones. | 16 Tenebrionid sp. |
| | 17 Formica fusca and Myrmica rubra. |
| | 18 Cochleopa lubrica. |

- | | |
|-----------------------|--|
| 19 Agrotis sp. | 22 Pteris sp. (2 tape) and Silybia lunata. |
| 20 Tenebrionid sp. | 23 Bombus sp. |
| 21 Forficula sp. | 24 Vespa vulgaris and sp. non det. |
| 25 " | 25 Luctia sp. |
| 26 Bombus terrestris. | |

1 Carduus marianthus. 2 C. palustris.

NEW OR NOTEWORTHY PLANTS.

SILENE FORTUNEL*.

We are indebted to Mr. Amos Perry, of the Hardy Plant Farm, Windmore Hill, for a specimen of this pretty plant, which, though gathered by Staunton in China in 1793, and by many subsequent collectors, and introduced into botanic gardens as long ago as 1847, has not found its way into our gardens generally. We noted it, however, some few years since from Kew. It is a branching annual or perennial (?), covered with glandular viscid hairs, with slender, wiry branches. The upper leaves are sessile, viscid, narrowly oblanceolate, about 3 cent. ($1\frac{1}{2}$ inch) long, 4 or 5 mill. broad, and sharply pointed. The numerous flowers are in loose, erect, panicle cymes; each flower is about 1 cent. ($1\frac{1}{2}$ inch) long, with a long tubular, striated calyx, dividing at the top into five rounded obtuse, membranous lobes; petals five, half the length of the calyx, lobes, each with a long claw, expanding into a wedge-shaped limb, dividing at the apex into three or four deeply lacinate lobes. It is a nearly ally of our wild Nottingham Catchfly, which occurs on the cliffs near Dover, but the present plant is more ornamental.

CYRILLA RACEMIFLORA (see fig. 61, p. 199).

Messrs. James Veitch & Sons rendered good service recently by exhibiting a flowering specimen of this rare shrub. It can hardly be considered as a novelty, seeing that it was introduced from the Southern United States as long ago as 1765, according to Nicholson. That may be so, but few can have seen it out of botanic gardens. It was figured in the *Bot. Mag.*, t. 2456, and in London's *Arboretum*, iv., 2577. It has many claims on our notice. It is an elegant greenhouse shrub, which possibly might prove hardy in our southern counties. Its botanical structure is such that botanists are still puzzled where to place it, and its geographical distribution is remarkable, extending as it does from Brazil through the West Indies, and northwards from Florida to N. Carolina, and westward to Texas.

Cyrilla racemiflora, says Sargent, in his *Silva*, "is found from the coast region of North Carolina southward to about latitude 30 in Florida, growing inland in South Carolina and Georgia, at least as far as the neighbourhood of Augusta. It re-appears on the keys of southern Florida, extends westward along the Gulf coast to the valley of the Neches river in Texas, and has been found in Cuba, Jamaica, Dominica, Demerara, and Brazil.

Cyrilla racemiflora inhabits rich shady river-bottom lands, the borders of sandy swamps, the shallow ponds of the coast Pine belt, and high sandy exposed ridges rising above streams near the Gulf Coast. In such situations as the last it attains a real arboreous habit, and its largest size, usually growing with the Cliftonia and Yaupon, with Water Oaks and Gum-trees.

Cyrilla often occupies, with the Water Gums, the Cliftonia, and Andromeda nitida, the shallow ponds so common in the Pine forests of the Gulf coast, where the water stands to the depth of 4 or 2 feet during three-fourths of the year. In such partially aquatic situations its mode of growth is peculiar. Fifty or a hundred stems of all sizes, from half an inch to a foot in diameter, spring from a common root and spread in all directions like the stalks of a tussock of Sedge, interlocking and forming a dense, impenetrable thicket 30 or 25 feet high. The leaves are often only an inch or an

inch and a half long, oblanceolate, rigid, and more persistent than those on plants growing in drier soil. This variety, which is not rare in the coast region from Florida to Louisiana, was first noticed by Dr. A. W. Chapman near Apalachicola, Florida, and is mentioned in his *Flora of the Southern States*, 272.

"Cyrilla racemiflora was first noticed by Dr. Alexander Garden, a resident of Charleston, who, in 1765, sent it to Linneus. Two years later it was, according to Aiton, introduced into England by a Mr. John Cree; it flowered near Paris, in the garden of J. M. Cels, in 1786. Cyrilla racemiflora, although valuable as an ornamental plant, on account of its handsome lustrous foliage and graceful and abundant inflorescence, has probably seldom been cultivated except in botanic gardens.

"According to Nuttall (*Sylva*, l.c.), Cyrilla racemiflora proved hardy in John Bartram's garden at Kingsessing, near Philadelphia, where, in 1810, he found a specimen 20 feet high, with a trunk 26 inches in diameter. This plant disappeared many years ago. Cyrilla flowered in the Loddiges' nursery at Hackney, near London, in 1824, and the figure in the *Botanical Magazine* was made from this plant." *Sargent*, l.c.

As shown by Messrs. Veitch, it forms a small shrub, with slender, somewhat angular branches, with prominent leaf-scars at remote intervals. From the centre of each scar a raised line runs down the branch almost to the next scar beneath. This line causes the branch to be somewhat angular.

The young leaves are at first crowded in tufts at the ends of the shoots, but as growth goes on the shoot elongates, the internodes become separated, and eventually the old leaves fall, leaving merely the scars, and a tuft of new leaves at the apex of the shoot. In the tropics, the leaves are said to be evergreen; in colder climates they are deciduous, and assume a bright red colour in autumn. The petioles are very short (about 1 cent.) and are encircled at the base by a fleshy cup, which proceeds from the cortex of the shoot. The blade of the leaf is somewhat leathery, glabrous. A small leaf measured 5 cent. long, 15 mill. broad; but most of the leaves were larger, all oblanceolate, tapering gradually towards the stalk, acute at the apex, quite entire at the margins. Racemes numerous in tufts at the end of the "old wood," pendulous, many flowered, each about 7 centimetres long, snow-white, like the bracts and the parts of the flower. Pedicels slender, recurved, triangular, springing from the axil of a lanceolate bract nearly as long as itself, and bearing at the apex two short linear bracteoles. Flowers 4 to 5 mill. long, rather longer than the pedicels. Calyx syncarpous, cup-shaped at the base, dividing below the middle into five valvate, deltoid, acute segments; corolla polypetalous, twice the length of the calyx, of five oblong, obtuse petals twisted in the bud. Stamens five-hypogynous, free springing from the outside of an hypogynous disc, with flattened, awl-shaped filaments attached to the back of the small subglobose, two-lobed anthers, which open longitudinally, and mature before the stigmas. Pollen grains as observed by Mr. Worthington Smith, simple elliptical.

Disc encircling the base of the ovary, deep green, fleshy, cup-shaped. Ovary flattened, or somewhat triangular, 2-celled, with a short blind style. Ovules two, pendulous from the inner corner of each cell. Fruit described as capsular indehiscent. Seeds pendulous, with fleshy albumen.

The poly-petalous nature of the corolla, with the twisted revivification of the petals, the hypogynous stamens, the deep cup-shaped

disc, and the position of the ovules, form a combination to which it is very difficult to assign the correct position. Some say the Cyrillaceae are like the Ericaceae, indeed there is a general resemblance in our plant to Clethra. Others place them near Ilicineae and Celastraceae. Lindley suggested an affinity with Olacaceae, to which they are evidently nearly allied. The presence of a thick nectar-forming disc, and the circumstance that the anthers open before the stigma matures, suggest that the flower is fertilised normally by insect agency, the white colour of the inflorescence and of the flower serving to make the flowers conspicuous. It is singular that the artists who have drawn the plant should so many of them have omitted to represent the green disc which is so conspicuous in the fresh flowers.

The manner in which the racemes are formed at the end of last year's wood, encircling the terminal bud, which lengthens into a shoot before the flowers expand, and the branches denuded of their leaves give a peculiar appearance to the shrub.

It is not necessary to cite all the authorities who have written on this order; it will suffice to mention some of the more recent ones:—

Baillon, *Hist. Plant.*, xi. (1892), p. 211 (sub-Illicaceis).

Sargent, *Silva N. Amer.*, vol. ii. (1891), tab. 51 (Cyrillaceae).

Gilg in Engler, *Naturl. Pflanzenfamilien*, iii., 5 abtheil., p. 181 (1896), (Cyrillaceae).

Britton & Brown, *Illustrated Flora of N. United States*, ii., 389 (1897), (Cyrillaceae).

Bailey, *Cyclopaedia of American Horticulture*, vol. 1. (1900), p. 439.

Cyrilla was a Professor of Botany in Naples in the middle of the eighteenth century. M. T. M.

A MIDLAND GARDEN.

(Continued from p. 177.)

I AM fond of the Hornbeam tree, and have usually included it among my plantings. I like the expression of the tree; it implies a strong, determined, resolute, and somewhat rugged character which will just do its duty through all the storms of life, and come up smiling even to the end. Very little grown, and rarely seen in this part of the country, it thrives here nevertheless, making a good shade tree, and keeping its brown autumnal leaves far on into the winter. For the latter reason, and because it will stand cutting and chopping and twisting, hedges are made of it in some districts; it is worthy, however, of a nobler fate. Content with any situation, and any soil except chalk, wind and storm and frost have no effect upon it; it grows slowly, but the wood it makes is hard and tough, and one of the best for fuel. The Hornbeam in this garden is 25 feet high, and has a trunk 8 feet in diameter after twenty-five years' growth. In the month of May it decks itself with pretty tassels of the male and female flowers separately, of which the female are the prettier, as they should be.

In consequence of something I have said in one of these papers, I have had several private inquiries as to the best method of educating and training a young gardener. For a mere gardener's labourer much education is, of course, not necessary. Anybody can learn to dig and hoe and get up Potatoes; it is a matter of practice only. But a man who has higher aspirations, who means to be head-gardener on some great estate, or at some public institution, or a professional

* *Silene Fortunata*, *Viviani, Hort. Picta*, (1-17), ex *Linnao XXIV*, 181, fide *Hemslay in Jour. Linn. Soc.*, vol. XXXI., p. 95.

nurseryman on an important scale, must prepare himself by a fair, all-round education. He ought to have some knowledge of Greek, Latin, French, and German, for all these languages are necessary to the comprehension and pronunciation of plant names. In science he wants some acquaint-

it can teach him, he may by hard work get the rest for himself. Self-education is the most thorough after all. In finding things out for yourself, you get so much collateral knowledge, and have it more deeply impressed upon the memory. It is real education, whereas school work is often no more than instruc-

practical art of gardening in all its many branches—the growing of vegetables, of fruit, and of flowers in the open garden; the management of the frame, the greenhouse, the stove, the vinery, the orchard-house; the various methods of propagating by budding, grafting, layering, and striking



FIG. 61.—CYRTIA RACEMIFLORA; GREENHOUSE SHRUB; FLOWERS WHITE. (SEE P. 198.)

ance with geology, chemistry, botany, entomology, and oöithology. These, of course, in addition to the "three R's," and the ordinary English curriculum. To get all this he must be at school till he is fifteen at least, and he will be a clever lad if he gets all he wants by that time at any average school; but if his school is not below the average, and if he diligently learns all that

tion. "Where there's a will there's a way," says the proverb. If a man means to get himself sufficiently educated, he can generally do it; and if he does not, he must aspire to a somewhat lower position than that of a first-class head gardener. When he leaves school, he must still devote much of his leisure to his studies, and his working days to acquiring the

cuttings; each of these has to be distinctly learnt, and books alone cannot teach them. It is probably impossible to get an all-round knowledge of these various branches in less than ten years. Schools of Gardening are now beginning to be established, and if they are well arranged, a year or two at one of them might be well spent. But the best method, as things now are, is to get employ-

ment as an under-gardener at some good establishment, and as soon as the student feels to have learnt all he is likely to learn there, he should change to another place where the work is different. A clever young fellow who prepares himself in this way ought, by the time he is 25, to be worth £3 a week. But will he get it? *Ed.*] If he can raise a little capital, he may make more money by establishing a business as a nurseryman, a seedsman, or market gardener, and an established business is a heritage for a man's family, but it is not everyone who has the genius for business, and the work is in some points less agreeable. *F. T. Mott, F.R.G.S., Birstall Hill, Leicester.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS: RIPENING THE WOOD.

THIS is a matter in which many gardeners fail, in their desire to produce perfect blooms, by not getting the wood ripe. Undoubtedly, the thorough ripening of the wood is most essential to the highest development of the flowers, and it is more apparent in incurved Chrysanthemums than in others, because in the former the depth and solidity of blooms are very essential matters, and these are only to be obtained when the wood (shoots) are well ripened. Ill-ripened shoots will produce flowers of large diameter, but they will be lacking in depth and inferior in form. There are three chief causes which tend to the production of immature growth, *viz.*, loose potting, which allows of the roots readily rambling into the soil, and thus resulting in shoots of a soft nature; secondly, a too rich potting soil, or the excessive use of manures, such as nitrate of soda, which induce luxuriance of growth. This luxuriance may please those who do not understand its effect on the blooms, but it is nevertheless deceptive, for the tissues never get well solidified; thirdly, crowding the plants together, so that the shoots get attenuated and the leaves ill-developed. Plants that are huddled together in huge bundles, with their shoots encircled by raffia and tied to a stake, cannot obtain that exposure of the shoots to the sun and air that is so desirable. By the time that the plants are in bloom, the shoots should be almost of equal hardness to a piece of Oak, and the colour of the bark should be of a rich brown, with a rough, uneven surface. The leaves of such plants assume in September a bronzy tint, some varieties indicating this characteristic more than others. There is no such thing possible as growing the plants of great strength and then ripening the wood suddenly, so to speak, by withholding water so as to check further growth. The growth must be gradual throughout, from the cutting stage till the flowers expand.

Many a disappointed exhibitor has found fault with the judges when he has staged blooms extremely large in diameter, but what is known as "thin" in their "build." Not only is this thinness apparent at times in incurved varieties, but in the Japanese, and from the same causes. The blooms from unripened wood do not retain their freshness, either upon the plants or in a cut state, in nearly the same degree as those produced by thoroughly matured wood. There is yet time to correct any mistake in the training of the plants and crowding the branches together, or allowing the laterals to grow to an undue length before removing them. This is a detail for which there can be no excuse. Promptly

remove all surplus shoots, decaying leaves, and train the shoots or branches thinly, never allowing the leaves of one shoot to overlap those of its neighbour.

Plants of varieties that are late in forming flower-buds, or which are weakly in growth, may be assisted by a dose of nitrate of soda, dissolved in water at the rate of half an ounce to 1 gallon of water; giving the plants one dose of this will accelerate growth, and perhaps make up for lost time in bud-formation. Any plants that show a tendency to a loss of chlorophyll, or colouring matter in the leaves, may be improved by a dose of sulphate of iron, given at the rate of an ounce to 1 gallon of water.

In some localities, plants are often pale in colour in their leaves, owing in some cases to the large quantity of lime in the soil. Lime is an essential to success in Chrysanthemum-culture, brightening the colour of the blooms; but it is present in excess in some soil. Plants with leaves pale in colour are not unhealthy when it is caused by the reason stated, nor are they less healthy when the cause is attributable to the application of water obtained from wells dug in the chalk. Plants constantly watered during the summer with such water cannot but be pale in colour; yet when they are placed under cover in the autumn, requiring less water at the roots, and that given to them being from stored tanks, really rain or soft water, it is surprising how quickly such plants assume their proper tint.

I mention this loss of colour in the leaves with a view of reassuring the inexperienced, who may happen to have plants affected in this manner. *E. Molyneux.*

ORCHID NOTES AND GLEANINGS.

ARACHINANTHE LOWEI.

A NOBLE specimen of what is commonly known as *Vanda Lowei*, with several tall stems bearing altogether about a score of its pendulous flower-spikes, which vary in length from 3 to 7 feet, is now in flower at Messrs. F. Sander & Co.'s nursery at St. Albans. It is a very stately and remarkable Orchid, and would well repay a visit from anyone who has not seen this species in bloom. The plant is a fine variety from out of the original importation from Borneo to the Luddemann collection at Paris, and it affords striking proof that Orchids do not necessarily die or degenerate under cultivation, if properly cared for. The flowers are yellowish-white, heavily barred with dark brownish-red, and a remarkable and striking feature is observed in the flowers, those on the bases of the flower-spikes being quite dissimilar from the others, being broader in the segments, and of a dark yellow colour spotted with crimson.

CATELEYA HARDYANA LINDENI.

Flowered by Messrs. Linden of Brussels in 1894, and illustrated in *Lindena*, x., p. 75, of the same year, this natural hybrid was very much admired, and doubtless realised a good round sum. It is now in flower with Henry Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), and its flowers show an improvement, when compared with the illustration to which allusion is made, the flowers being larger and of a much finer colour. The sepals are light purplish-rose, with a slight creamy-white freckling, and silvery mid-rib. The petals, which are also light purplish-rose, have similar white mid-ribs, and a delicate veining of silvery-white between the colouring. The lip is of a glowing purplish-ruby-crimson, with rich gold veining on the side lobes, and

pitches of chrome-yellow on each side of the middle portion. There is a fine collection of *C. Hardyana* and *C. aurea* at Baronshalt.

THE ROSARY.

SINGLE ROSES.

AMONGST the developments which have taken place in Rose-culture during the past few years there is none that can be more warmly welcomed than the taste for single Roses, and it is more than probable that we shall see much progress in this direction before long; some of those which we now have are distinct species, while others are the results of the efforts of the hybridiser. Some of our most successful hybridisers have already given us the results of their work, and doubtless others will follow on in the same direction. The increased culture of single Roses is due to the desire to have something that will make our gardens gay and beautiful without the stiffness and formality that attaches to large-flowered Roses, and as most of them are of rambling or climbing habit they are admirably adapted for covering walls, fences, out-houses, or for training as pillars; and here again, as in so many other things, we are indebted to Japan and the far East for many of our most valuable additions; many of them are, indeed, of such rampant growth that, unless ample space can be afforded, they will soon absorb everything. I remember seeing at my late friend's (Mr. T. W. Girdlestone) a plant of the single R. polyantha which covered a space of 10 ft., and I believe would have gone on for 10 ft. more if it had been allowed to have its way; and I had one myself which I was obliged to cut away altogether, because it had intruded most obtrusively among other Roses which I was anxious to retain. I think it is useful to proceed cautiously in this matter, and not, because we advocate their growth, disparage those beauties, such as the Hybrid Perpetual, Hybrid Teas, Teas, and Noisette-classes, which have given us such pleasure, and will, I hope, continue to do so; for I am quite sure of this, that had it not been for the exhibition of these fine show varieties, the zeal for Rose-culture would have long ago cooled; and it is idle, I think, to run down these boxes of big blooms, which have led so many to cultivate them in the various sections which now solicit the care and affection of the Rose-grower. Years ago the Hybrid Perpetual Rose absorbed nearly all the care and affection of the Rose-grower; Tea and Noisette Roses were few in number, many of them also were delicate in habit, while others created disappointment by being budded on the Manetti stock, which was too strong for many of the varieties, and so oftentimes the stock flourished while the Rose died. I do not propose to speak of all the single Roses, but select a few which will I feel sure give satisfaction. I have already noticed the single Polyantha, which I believe will repay those who grow it; then there is *Rosa macrantha*, a most beautiful white single Rose, with a cluster of golden-yellow stamens in the centre. Although very rampant in growth and very free flowering, it can hardly be described as a climber; it is one of the most delightful of the single Roses.

Paul's Single White (Paul & Son).—Very fine flowering, evidently of Noisette origin; in some way in size and colour it is very like the preceding, but with dark stamens instead of golden ones. Blooms of it can be often had in the autumn.

Carmine Pillar (Paul & Son).—A most vigorous and free-flowering single Rose, producing large

bunches of flowers from 3 to 4 inches across: a beautiful bright carmine. The plant will grow from 10 to 12 feet high, and makes an admirable pillar Rose.

Royal Scarlet (Paul & Son).—A single-flowered H.P., brilliant in colour, probably the most scarlet of all our Roses; it is also well suited for bedding.

Waltham Climber, No. 3 (William Paul & Son), a dark crimson climber, very vigorous, free flowering, and sweet-scented.

There is another Rose of most brilliant coloring, but not quite single, though it will frequently come so—*Bardon Job*. It generally

Irish Glory.—A large flower, brilliant in colour, its beautiful veining rendering the inside of the petals of a lovely marbled silvery-pink, while the outside of the petals being crimson, the contrast of the golden anthers renders it a striking flower. It is very sweet, and a good grower.

Irish Modesty.—Another very beautiful variety: colour a delicate pink, the base of the petals suffused with pale golden-yellow, with delicate straw-coloured anthers; the blooms are large and plentiful.

These three make excellent border plants, while their vigorous habit renders them admir-

able as the ground falls more than 195 feet from north to south, the formation of a cricket ground, as well as a level space for boys' and girls' playgrounds, gymnasiums, &c., has involved the moving of a great quantity of earth.

A series of small lakes connecting with miniature waterfalls, form a striking feature. A very handsome fountain, which is erected near the main entrance, is fed from the lowest lake.

The new park was formerly the Oak Hill estate, and with the mansion comprises 28½ acres. The spacious mansion and the original garden about it are retained; the former is to be the home of the public free library, while the garden has been entirely renovated.

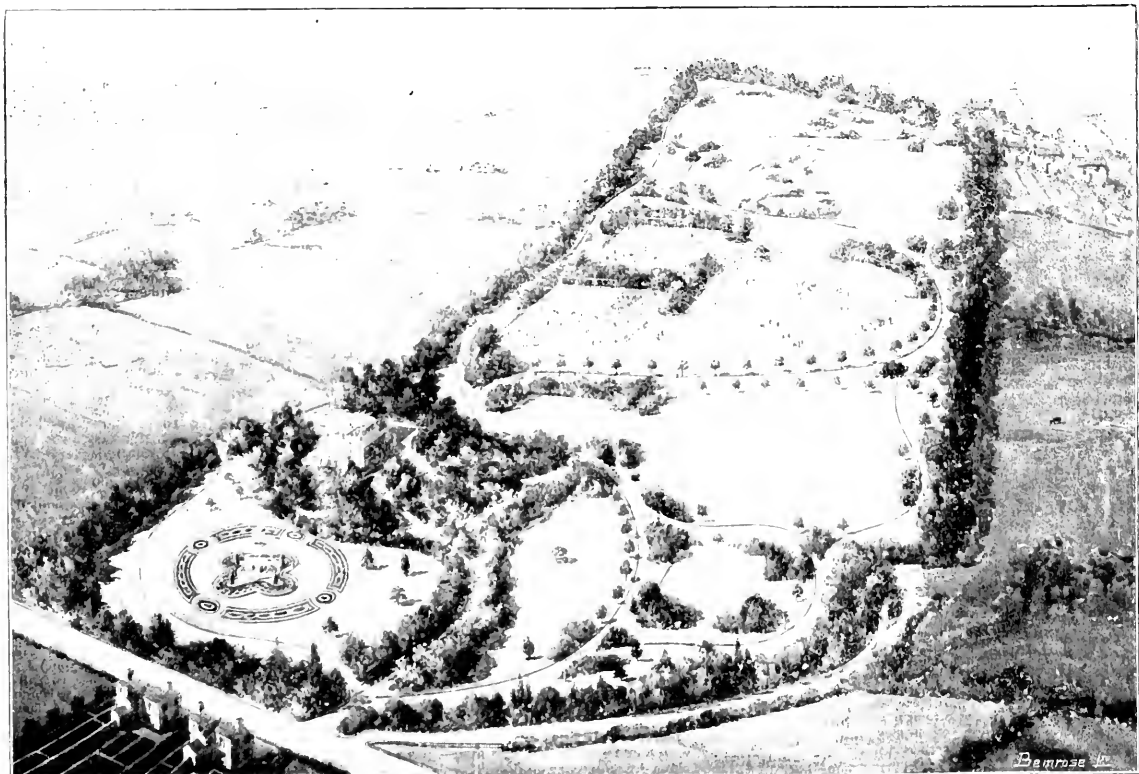


FIG. 62. PLAN OF WHITAKER PARK, AT RAWTENSTALL, LANCs.

attracts the attention of any visitor. All these single Roses, however, have one defect—they only bloom once; that is, they are not perpetual; but those well-known Irish growers, Messrs. Alexander Dickson & Sons, have endeavoured to remedy this defect by the production of three Tea single Roses, which follow the habits of that class by blooming up to a very late autumn. In my own garden I have some of them now (September) still in flower.

Irish Beauty.—Pure white in colour, with bright golden anthers, which give it a very distinct appearance, borne in clusters of very fragrant flowers. Being very large, sometimes 5 inches across, the plant is very vigorous, but not rampant.

ably suited for this purpose. It will thus be seen that we have already some very beautiful single Roses, combining fragrance, delicacy of colouring, and vigour of growth, *Wild Rose*.

WHITAKER PARK, RAWTENSTALL.

A public park, 22 acres in extent, was opened on August 3 at Rawtenstall, in Lancashire, by Mrs. Whitaker, the wife of the donor of the park, who not only gave the site, but provided the money for the laying out. The park (see fig. 62) was designed, and the groundwork and planting carried out by Messrs. William Barron & Son, of Elvaston Nurseries, Borrowash. The park is situated on the side of a hill sloping to the south, and

FOREIGN CORRESPONDENCE.

DENDROBIUM CORNUFUM.

ASKED by your issue of August 31, just received, that this Dendrobium has just flowered in Major Joicey's collection. With me it flowered in March last year, and again at the same time this spring, together with "D. glomeratum," only it is a few days later in coming into bloom. I also received it with "D. glomeratum." I sent the bloom for identification to the *Orchid Review*, and the answer was "Dendrobium, allied to 'D. glomeratum,' species unrecognised, see F. 96, 'Correspondence.' It is a delicate plant, and does not make the vigorous growth of its companion—'D. glome-

vatum." I grow both on the east side of my hottest house. H. J. Ross, Poggio-theriardo, Florence.

NURSERY NOTES.

PHLOX DRUMMONDI'S AND SNAPDRAGONS AT READING.

VERY recently I had to wait an hour at Reading, and to utilise it profitably went up to Messrs. Sutton & Sons' Portland Road nursery to see what I could there. Whilst the houses were, as usual, full of Begonias, Gloxinias, Streptocarpus, Achimenes, Gesneras, and many other plants, the potent attraction for me was found in the truly wondrous and beautiful collections of annual Phloxes and Snapdragons growing out in the open ground. To describe the beauty seen in these plants would be impossible. In both there seem to be three distinct types—very dwarf, medium height, and tall. Of the Phloxes, the medium seem to be the most perfect of summer-flowering plants to be seen. Single ones, 12 inches over and 6 inches in height, were the most complete floral masses conceivable. Would that the firm could grow a few score in pots, and show them at the Drill Hall, as I saw them at Reading! What glories, yet what varied colours! What perfectly formed flowers! and all easily to be had from a few packets of seed, sown in gentle warmth in the spring. In the very compact or dwarf sorts, as in the old free-growing forms, colours are legion. To select properly, the varieties should be seen in bloom. Of Snapdragons, the tall, that is plants reaching when in bloom 30 inches in height, seemed to be the most attractive. Amongst these are some flowers of novel and very lovely colours, quite fresh to me. What remarkably beautiful effects could be got from these Snapdragons were the dwarf white, yellow, red, or crimson forms—some 2 inches in height, and very even, used for carpeting, with selected lines of the tall forms planted in the beds. Those who are on the look-out for bedding novelties should make a note of this suggestion. A. D.

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. L. MEASTERS, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Vanda acroten.—This is one of the most attractive of the autumn-flowering Orchids, and its lovely pale blue flowers are always appreciated, and useful in decoration. I am aware of the difficulty that is experienced in keeping this species in vigour for any great number of years after importation, and I have tried several different methods of cultivation. The most successful one which I have followed for several years is to remove the plants when this is carried out with other Vandas in the spring; I then suspend them in the lantern-roof of the Phalaenopsis-house, and at the warmer end of the East Indian-house, the plants growing equally well in either. During the season of growth water is afforded abundantly at the root, and the atmosphere is kept very moist till the flowers are removed from the plants, and then much less water is applied at the roots, and they are removed to the colder end of the Cattleya-house, or one of the intermediate houses, and kept in a fairly dry state during the winter months, just as much water being afforded as will keep the leaves plump. The seasons have much influence upon the flowering of the plants, and in a bright summer like the last, flowers are more abundant than in a season of little sunshine. Strong sun-light when the flowers are developing has a considerable effect on the

depth of the colour in the blossoms, as is observed in flowers that expand early, the colour being of a more intense tint.

Current work in the Houses.—The plants in the cool divisions should now be repotted forthwith; and the roof-glass and woodwork washed on both sides. All staging and the pots should be cleansed. Where the plants have been entirely removed from a house, it is advisable to place at intervals about the steps and on the pots small quantities of brewers' grains or dry bran, as a trap for slugs and snails, placing it on pieces of glass or tiles for ease of removal. By making an examination at night with the aid of a light, many can be caught and destroyed. The gardener cannot be too careful in this respect, nothing being more annoying to employer and gardener than to find the young flower-spikes have been devoured, and the work of a year lost. A small piece of cotton-wool twisted around the base of the spike makes it more difficult for slugs to climb, and often prevents them from reaching the tender points of the flower-scape. With the drier condition prevailing owing to colder nights and the use of fire-heat, a sharp outlook should be kept for red-spider, a most detestable pest at this season. The plants most likely to be attacked by it are Cymbidiums, the *Chimera* section of *Masdevallias*, *Lycastes*, *Stanhopeas*, *Catasetums*, the smaller-growing *Zygopetalums*, and other Orchids with tender leaves. When remarked, carefully sponge the leaves with weak soapsuds made with soft-soap. Any tender plants which have been removed to the Odontoglossum-house, and especially *Miltomia vexillaria*, should be transferred to the cool intermediate-house forthwith, the cool, damp condition prevailing in the Odontoglossum-house being apt to cause spotting of the leaves. The floor in the cool division should now be damped sufficiently early to allow of the moisture becoming dispelled before the evening. Cold draughts should be carefully guarded against.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PARK, Esq., Prestwood Hall, Loughborough.

The Conservatory.—With diminished light and shortening days it will be very necessary to keep the climbing plants thin and open so far as may be possible, so as to impede the light as little as possible. The abundant growths of *Passiflora* now past flowering should be reduced in number, and the rest tied in loosely, only in sufficient quantity to give a finished appearance to the rafters, &c. Most of the plants of *Campanula*, *Fuchsia*, *Colosia*, *Coleus*, *Balsam*, being now past their best may be removed, and their place filled with *Lilium lancifolium*, *speciosum*, *roseum*, *rubrum*, and *album*, early-flowering *Chrysanthemums*, ivy-leaved and zonal *Pelargoniums*, late-blooming *Fuchsias*, and *Begonias*, *Achimenes* which are shabby-looking should be replaced with later successions, or be replaced by baskets filled with *Asparagus Sprengeri*, which will make an agreeable change. Continue to afford a small quantity of ventilation at night, and keep the atmosphere of the house dry. Fire-heat will not be required for some time longer.

The Greenhouse.—With the thermometer at 31°, as was the case on September 1, the need for housing the plants will have become apparent. The first to place under cover are *Ericas*, *Euphrasias*, and *Clivias*, *Camellias*, *Azalea indica*, and the greenhouse varieties of *Rhododendrons* may be left outside a week or ten days longer, unless the weather should alter for the worse. The glass and woodwork, &c., should be cleansed or painted, and clean gravel spread on and beneath the stages. Let every pot be thoroughly cleansed, and see to the drainage of all the pots. Afford plenty of air in the house day and night, so long as the indoor temperature does not fall below 40°. If there are no permanent occupants of the house, let a handful of flowers of sulphur be burned in the house before bringing in the plants, in order to kill fungus and insects.

Winter-flowering Zonal Pelargoniums.—The first batch of these plants may now be brought indoors, affording the plants a light position in an airy house. They must not be coddled, and the highest temperature that should be afforded them at nights is 45°, and ventilation at all times. Discontinue to pick off the blooms, allowing the plants to perfect their flower-trusses. Afford nature-water up to the time when the first flowers open. Given later than this, it tends to make the flowers loose. If damp weather prevail a little fire heat may be applied. Avoid affording the plants much water, and do not damp the paths, or spill water about the house more than can be helped, and have the floors dried before evening.

Violets.—It is essential that towards the middle of the month Violets in frames should be planted. If the pits or frames can be heated by a flow and return hot-water pipe, the plants will not be affected by damp, which is the greatest foe to successful Violet culture. Failing any means of heating, portable frames should be prepared by making up beds of well-fermented manure, which has been frequently turned over. Make up the beds to the height of 3 feet at the back, and 2 feet in the front, and in a sheltered position facing south, and thoroughly mix the material whilst making the beds, tramping it evenly and regularly well as the work proceeds. Having built up the bed, place frames on it, and then put into each light some spent Mushroom-bed dung or decayed leaves, filling the lights to within 1 foot of the glass with loam, road-grit, and leaf-soil, in about equal proportions, and allow this to settle and the violent heat to be dispelled before the plants are set out. When the whole has sufficiently subsided, and before planting, mix a small quantity of artificial manure with the surface soil. When each plant is lifted dip the foliage into a mixture of Gishurst Compound Soap—or carbolic soft-soap—made at the rate of 2 ozs. of the soap to 1 gallon of rain-water, in order to destroy red-spider, which has been prevalent this year, and rinse in clean water. Convey the plants on a handbarrow or flat tray, and set out the plants so that they nearly touch each other. I plant from seventy to eighty of them in an ordinary two-light frame. Make the soil firm, keep the large plants towards the back of the frame, and finish at the front with the smaller ones. Apply water copiously, and shade from bright sunshine for a few days. In about a week remove the lights, and do not make use of them except in bad weather. If the lights must be put on to the frames tilt them at the back and front night and day during mild weather.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Pears.—In order to secure a regular supply of ripe pears, the trees of the early varieties should be examined at intervals of three or four days, and the largest and forwardest specimens gathered a few at a time, which will generally ensure a constant supply, and prolong the season of certain varieties. Besides Williams' Bon Chrétien, which will soon be over, small gatherings of Souvenir du Congrès, Fondante d'Automne, Madame Treve, Beurré d'Amabilis, Doyménil-Boussocq, and even a few of Louise Bonne of Jersey may be gathered if desired; but those fruits should be selected that from their appearance and size ensure their being the forwardest specimens. By gently lifting the fruits, it will be seen which will come away easily from the spurs.

Out-of-door Vines.—To facilitate the ripening of the fruit, the surplus growths should be kept closely pinched back, which will have the effect of exposing the bunches to the sun and air. The long period of bright summer weather has been very favourable for the maturing of out-of-door grapes, and they should now be ripening fairly well. Protection should be afforded from wasps and flies, which are now troublesome. For this purpose thin muslin bags are best, or thin brown canvas ones, which may be pur-

chased cheaply from the horticultural sundries-man. Wasps and flies will continue to be troublesome until the arrival of colder weather. Many may be trapped by double handlights and a little damaged fruit placed beneath them as bait. Place a handlight, having a square of glass removed from the top, on four bricks, one at each corner, and upon this place a second handlight, making it fit closely round the sides, which should be floored with a little moss, or such-like material. Plums make an enticing bait. Those insects which get into the upper handlight are trapped, as they seldom find the exit. If the borders are dry, a heavy application of water should be made.

FRUIT UNDER GLASS.

By G. MALCOM MONTYLE, G. S. GARDNER to SIR CHARLES KNAXAT, The Glen, Inverleithen, Peeblesshire.

Late Grapes.—The spell of dry and hot weather will have done much to hasten the ripening of late Grapes, which, in many instances, were rather backward to please those who like the fruit to be well ripened by the end of the present month, for unless quite ripe by that time they are almost sure to be of inferior quality, and keep badly, although Gros Colmar will still keep adding to its colour for six weeks. Too much shade is objectionable; Grapes grown under a heavy canopy of foliage frequently have very tender skins, therefore, remove all sub-lateral growth, leaving nothing but the primary leaves, and even these may, in many cases, especially where there are no bunches on the laterals, be drawn in closer to the main rods so as to admit of more sunlight to the Vines and bunches of white Grapes. In each and every case admit abundance of dry air by day, and a moderate amount of both front and top air by night; the highest temperature, which should seldom fall below 70°, being kept where Muscat Grapes are ripening. Gros Colmar is usually one of the first to commence and the last to finish colouring. If not over-spread, and if the foliage is in a healthy state, the colour will continue to improve till the end of October; but if either from over-cropping, or the maintenance of too high a temperature, the berries are now of a foxy colour—nothing will remedy this blemish. Net that those are necessarily deficient in quality, but they are of far less value in other respects. Faulty ventilation is responsible for numerous failures to colour and ripen Grapes properly, and it has also very much to do with their being kept in good condition after they are ripe. Muscats still require fire-heat accompanied with a free circulation of air till the fruit is thoroughly finished; they should have the foliage rather thin; indeed, the leaves may be tied aside, as it is necessary that the fruit may get abundance of light and air. Keep the night temperature at 65° to 70°, with a fall of 5° through the night, attending to the fires in good time in the morning, so as to allow of the temperature being raised to 70° to 75° to insure a long ripening day. When the temperature is raised to 80° or 85° from sun-heat, afford a free circulation of air, and even 90° to 95° will do good, the heat being maintained at a high figure by reducing the amount of ventilation as the sun declines. The temperature should be allowed to gradually decline at night, only keeping enough warmth in the hot-water pipes so as to allow of the top and bottom ventilators being left open to a slight extent, in order to prevent moisture condensing on the berries. This kind of treatment should be continued till the Grapes are thoroughly ripe, when a gradual reduction of the temperature should take place, otherwise the fruit will shrivel. Extremes of temperature ought always to be avoided. The border, especially the inside one, should not be allowed to become dry. If there is any fear of this happening, a good application of water should be made on a fine morning; the border should be covered with dry material, straw, bracken, &c., to keep down moisture. Although good rather than harm results from damping down a viney in the morning of fine clear days, it should not be practised in dull weather, nor in the afternoon, what-

ever the weather. When the Grapes are approaching maturity, the best and the only remedy to keep Muscat Grapes from shrivelling is to hasten the ripening process. Muscats that are now fully ripe will probably keep much better than those not so forward by a month. A temperature of 50° to 55° is necessary for keeping Muscat Grapes in good condition after they are ripe, and other houses of late thick-skinned varieties will require a similar temperature for the benefit of the Vines.

Figs.—Fig-trees planted out in houses not infrequently make very strong shoots, with the result that the crops of fruit are scanty. In that case root-pruning should be resorted to, and the roots confined to a border 3 or 4 feet in width. A trench dug out at this distance from the stem after the fruit is gathered will check the tendency to make growth late in the year, and help to ripen the wood. If the drainage is not good, it will be necessary to lift the trees as soon as the leaves commence to fall, and to put into the bottom a layer about 1 foot in depth of rough stones, and on the top of this a layer 3 inches thick of mortar-rubble freed from pieces of wood and wood-shavings, strong turfy-loam mixed with a sixth part of finely-sifted old mortar or plaster, a fourth part of calcined oyster-shells, and a bushel of bone-meal to every cartload of 30 bushels of loam, and well mix all together. In replanting ram the compost, well incorporated, thoroughly about the roots, spreading the latter out evenly at different levels, adjust to the surface. Should the drainage be good, it will only be necessary to cut back the roots in the manner described. Confine the roots to that space, removing some of the exhausted soil from about them, replacing it, and top-dressing the whole with the above-mentioned compost. A border for Figs may be 2 feet deep. Plants in pots, which have already yielded a second crop, should now be set outside in a sunny, dry position, and afforded water so long as the foliage remains on them. A year which has been resting may be top-dressed with a rich compost, or reported into deeper pots, and then be introduced into a fairly brisk heat for aborning winter Figs.

THE KITCHEN GARDEN.

By J. MANNING, BECKETT, and HON. MAJOR ROLLER, 10, KINGS LANE, DEVONPORT.

Peas.—The inches of Beauty of Hebron, Early Regent, Snowdrop, and White Elephant, the haulm of which has died down, should be lifted, sorted, and stored as previously advised for the earliest varieties. It is advisable to change the "seed" every second or third year, and if the soil of the garden is light and friable, the seed should be obtained, if possible, from a heavier soil, and the present season is a proper one in which to purchase fresh "seed" for next year's planting, for if purchase is deferred till late in the spring, the sets obtained are often smaller than is desirable, and the price higher than now. These remarks are applicable to the later varieties that will be lifted in October.

Carrots.—As soon as large enough to be handled, prick out the seedlings 4 to 6 inches apart on well-prepared ground in an open position, as the hardier they are treated during the next two months, so much more likely are they to pass through the winter unharmed. In about five or six weeks after pricking out, the plants will be ready to be planted in their winter quarters.

Cabbages.—In most gardens the plants that were planted last October are allowed to remain to supply sprouts during the winter and early spring; and where this is the case, they should be cleared of all decaying leaves, and the soil of the weeds and rubbish, and a moderate dressing of nitrate of soda scattered between the rows and hoed in.

Manure.—It is now time to set about preparing manure for use during November and December, and as hot, dry weather is all

against getting this in order, nothing is gained by deferring this work. Scrawny litter from the stable-sand should have twice or more of its bulk of partly-decayed leaf-soil that has done duty for hot-beds added to it, and the whole thoroughly mixed together, drenching it with liquid-manure, or foiling this with clear water. In about one month the whole must be turned and moistened as before, in the absence of heavy rain.

Hoing.—The last week in August and the first week of the present month brought strong east winds, rendering a good deal of water to be necessary with late-planted Lettuce, Endive, Cabbage, Parsley, &c., and to break the crust that will have formed, the Dutch hoe should be constantly plied.

THE FLOWER GARDEN.

By T. H. STARR, Gardener to Lord Poltmore, Poltmore Park, Exeter.

Flower Borders.—The summer bloomers are rapidly passing out of bloom, and must be cut down, or in the case of annuals, removed altogether. Sometimes merely the flower-heads should be removed, and the foliage, being in presentable condition, may be left, more especially when entire removal would leave much bare soil. If the gardener possesses spring-flowering plants in quantity, these bare places may be dug and manured, and planted with suitable subjects. The rest of the borders should be hoed and raked, to give them a tidy appearance. Hapalliums are now very bright and effective; Kniphofias are flowering very profusely this season everywhere in this garden. Michaelmas Daisies will make the borders gay in a week or two, and must be neatly staked, to make them presentable and preserve them from injury by wind.

Roses.—The plants promise well for late display. Several of the newer varieties have proved very satisfactory this season, viz., Mrs. Sharran Crawford, a Rose with a fine bold bloom of a lovely shade of pink, but, like so many new Roses, deficient in fragrance; H. T. Papa Reiter, said to be a yellow Caroline Testout, is a poor Rose with us, and the yellow colour entirely absent. If this variety were as good in every way as Caroline Testout, it would be a welcome addition to the H. T.'s for quantity and freedom to flower. The Teas are much the better; at this season a good variety for massing is Dr. Grill, a flower of a shade of salmon-pink, remarkably free to bloom, and a robust grower. It forms a good companion to Marie Van Houtte, Madame Lambert, or Perle des Jardins. Empress Alexandra of Russia is a novel shade of colour, and quite distinct, but the flower-stems are weak and the flowers droop, and it is not, therefore, an effective Rose in beds or as a standard. Enchantress, H. T., is a pleasing shade of buff, of a nice shape, and a good grower. Aurora, H. T., is a sturdy grower, resembling C. Testout, but with the fragrance of La France. The blooms on our plants are deficient in size, which may be due to the plants being young. All flowers of Roses as they pass their best should be removed, and before the petals drop, as the latter give an untidy appearance to beds if allowed to fall to the ground. Strong growths on dwarf Roses should be secured against the wind, but do not shorten them; it is yet too early, for there would be a risk of the lower buds breaking into growth.

General Remarks.—The propagation of bedding plants should be continued, especially of bedding Pelargoniums. Varieties that have made but little growth will not afford many cuttings, and some of the plants will have to be potted for stock purposes. In showery weather, cuttings of a soft nature standing in cold frames require water to be carefully afforded, and the cuttings allowed plenty of air in the forenoon, any water required being then applied. The runners of Violets should be removed as soon as they are noticed, and the soil stirred between the plants, and cold frames should be prepared for the winter and spring-flowering plants.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

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

SALES FOR THE WEEK.

MONDAY, SEPT. 16.—Large consignments of Dutch Bulbs, &c., at 12.30, at Stevens' Auction Rooms, Covent Garden.

WEDNESDAY, SEPT. 18.—Large consignments of Dutch Bulbs, &c., at 12.30, at Stevens' Auction Rooms, Covent Garden.

FRIDAY, SEPT. 20.—Imported and Established orchids at Protheroe & Morris' Rooms, at 12.30 o'clock. Dutch Bulbs every day, except Saturday, at Protheroe & Morris' Rooms, at 11 o'clock.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—57.8.

ACTUAL TEMPERATURES:—

LONDON.—September 11 (6 P.M.): Max. 62°; Min. 54°.

September 12—(Full), warm.

PROVINCES.—September 11 (6 P.M.): Max. 61°; W. Ireland; Min. 53°; N.E. Scotland.

In the bad old times of the Society at South Kensington, the *Journal of the Horticultural Society*, if it did not fall altogether into abeyance, at least was published at very irregular intervals. Many were the complaints that reached us on the subject. Since the rejuvenescence of the Society, the *Journal* has, like the Society itself, taken a new lease of life. It is to us a matter of regret that many who advocated the improvement of the *Journal* are no longer among us to witness what has been accomplished in this way by the present indefatigable editor.

At the time we speak of, although some advocated the more punctual publication and the general improvement of the *Journal*, foreseeing that it might be one powerful means of advancing the interests of horticulture, and the welfare of the Society; yet others thought that few of the Fellows would care for it, or read it if they got it. All realised but too painfully the financial difficulties in the way. Times have changed. The *Journal* has become a most important factor in the development of the Society. Like the Conferences, it will have value when the mere records of ephemeral flower-shows will have ceased to have any interest.

We are induced to make these comments as the number just issued contains some special features, to which we are desirous of drawing attention. In the first place, there is the full text of MENDEL'S paper on hybrid plants, which is exciting so much attention now, though overlooked at the time of publication. We shall have an opportunity

of attending to this at greater length on another occasion.

Another new departure which we hail with great pleasure is the publication of brief abstracts from the various European and American horticultural journals. These abstracts are made by experts, and though brief, are furnished with references which will enable the student to pursue the subject further should he desire to do so. The students of the American horticultural colleges are trained to make abstracts from the various publications of past years, as well as of those that are recent. If the Chiswick students could be set to work with some definite purpose of this kind, the literature of any given subject would be rendered easily accessible. But we have no space now to discuss this matter fully, our present object being to point out what excellent value the Fellows of the Royal Horticultural Society obtain for their guinea subscription, and to congratulate the editor on the zeal and success of his efforts.

Kinging of
Herbaceous
Plants.

A RECENT number of the *Comptes Rendus* contains the following note by M. LUCIEN DANIEL:—"Annular decortication, or ringing, is an operation known from the most ancient times. It is applied exclusively to woody plants (fruit-trees and Vines) to make fructification more sure, and the fruits larger. As it had not previously been practised on herbaceous plants, the results of the following experiments with Cruciferous and Solanaceous plants are interesting:—

"1. *Cruciferous Plants.*—I operated upon different varieties of Cabbage, Brussels Sprouts, Kohl Rabi, Swedes, &c. In all these Cabbages the removal of the ring to a depth of about a fifth of an inch was made 2 inches from the ground, below the first leaves, and on young plants that had been pricked out into position a fortnight previously. Some hours after the operation, the leaves faded. After several days the lower, older leaves turned red, then yellow, and at last fell. If their environment was damp, the young organs rotted, and the plant died of too much water. If, on the contrary, it is kept sufficiently dry, the plant does not rot, and after a period of more or less noticeable deterioration the wounds heal, and the edges are wholly or entirely reunited. But in nearly all the specimens the height of the decorticated specimens remains less than that of the un-ringed or check plants. In time, changes in the outward form were manifest, but differed according to the varieties. Thus, in the Brussels Sprouts the heart is more open, less close, and smaller. In the Kohl Rabi, the tuber formed well above the incision, but was gourd-shaped instead of rounded. In the Swedes, operated on below the rosette, the leaves lengthened and the tuber was drawn out, while the radicles formed a full fringe. Finally, the flavour of the decorticated Cabbages was modified; it was less agreeable, and in the Cabbages the leaves and stem became brittle. These changes in height, form, taste, and resistance of the tissues perfectly reflected certain alterations noted, but not fully understood in certain grafted varieties of Cabbage. Evidently the cause was the same; that is, the modifications are due to the temporary check and to interruption of the liberian functions, as in both cases the liber was cut through when the wood, sliced in grafting, is spared in annular decortication.

"2. *Solanaceous Plants.*—In this family M. DANIEL experimented on the very large Aubergine from New York, and on Tomatos, attempting to obtain larger fruit. The Aubergine used for comparison bore fruit weighing about a pound; on the decorticated Aubergine he obtained a fruit weighing over two pounds. The Tomatos operated upon yielded fruit in a much larger quantity than did the check plant, but as the operator omitted to prune the tops to facilitate the growth of the first fruits, he obtained but a slighter increase compared with that of the Aubergine, although this increase was quite noticeable on many of the specimens. The fruits obtained were somewhat modified in flavour; they were more insipid, and less highly flavoured. From these experiments the chief conclusions arrived at are:—

1. Ringing of herbaceous plants is of practical interest. It is possible, by careful manipulation, to cause a marked increase in the size of the fruits of Solanums used as food, and probably in those of other families which yield eatable fruit.

2. Ringing is of physiological importance, as by using it in connection with grafting, at the same time and on the same kinds of plants, the origin of certain variations of general nutrition induced by grafting (decrease in height, modifications in form and flavour, delicacy of the tissues, enlargement of the fruits, &c.), can be determined."

LÆLIO-CATTLEYA DIGBYANO-MENDELI, VEITCH'S VARIETY.—Our illustration (fig. 63) represents the fine hybrid of *Lælia Digbyana* and *Cattleya Mendeli*, for which Messrs. JAS. VEITCH & SONS, of Chelsea, received a First-class Certificate at the Royal Horticultural Society's meeting on August 27, and which was adjudged to be the finest *Lælia Digbyana* cross yet flowered. It differs from other forms in having larger flowers, which are of an uniform bright purplish rose tint, instead of the pallid whitish lilac of forms previously flowered. Veitch's variety here illustrated is 8 inches across the petals, the finely fringed lip is 3 inches wide, the base of the lip being of a reddish tinge, and the disc of the lip bright yellow.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The usual monthly committee meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. Mr. C. H. CHRIS presided. The minutes of the last meeting were read and passed. Three new members were elected. Five members are receiving sick-pay; three others have been on the sick-list and off again since the last meeting. The treasurer stated that he had invested £500 in Cardiff Corporation Three per cent. Stock for £485 15s. The annual dinner will be held on Wednesday, October 9, at 6.30 P.M., at the Holborn Restaurant, on which occasion Mr. PETER E. KAY, V.M.H., will preside.

DISEASE OF THE POTATO.—At a meeting on August 26 of the Paris Academy of Sciences, M. G. DELACROIX contributed a paper on a bacterial disease of the Potato, and our contemporary, *Nature*, thus epitomises his observations:—"The disease in question, which is very prevalent in the centre and west of France, is due to a bacterium which appears to be identical with the *Bacillus Solanacearum* of E. F. Smith. It possesses the same characteristics on cultivation, and the symptoms of the disease observed in the United States on Potatos and Tomatos are similar to those observed in France. The only suggestion that

can be put forward as a remedy is a triennial variation in the crops in order to clean the soil, which appears to be the vehicle of the disease, from the pathogenic organisms which it contains." Another paper read before the meeting was concerned with the "invasion of streams of water in the department of Hérault by *Jussiaea grandiflora*, and on the growth of this species in France, by M. P. CARIÉS. The growth of this plant in some districts is so great that it forms true aquatic prairies. It has been stated that this plant could not fructify in France, but this is now shown to be inaccurate, since in the month of September, on the river Orb, the fruit was formed in the shape of capsules about 29 mm. in length, each capsule having five divisions containing about fifteen seeds. It is by these seeds that it multiplies so abundantly."

PRESENTATION TO THE TSAR AND TSARINA.—On the occasion of the visit of the Emperor and Empress of RUSIA to France, certain of the French horticulturists who took part in the St. Petersburg Exhibition in 1899, have decided to offer to their Majesties a souvenir of their kind reception at that date. The presentation is to take the form of some of the finest flowers and fruits grown by the donors. A committee has been formed, and includes among its members M. HENRI MARTINI, who was Commissary-General for the French Government at St. Petersburg in 1899; M. VÉRY, M. CH. MARON, M. LÉON DEVAL, M. ÉUGÈNE DELAVIER, and other prominent horticulturists.

PARIS EXHIBITION. Our much esteemed contemporary, the *Revue Horticole*, regrets, as we do, that our horticulturists took no part in this great undertaking, and points out that to wait at home for customers is not the way to do business, and that those who do attend these exhibitions will naturally get the preference over the absentees. There is some truth in this, no doubt; but, on the other hand, our contemporary forgets that the heavy duties levied by France on English fruit have killed the trade that once existed. Protection may be desirable for the French nation on that point we can offer no opinion—but it certainly offers no hospitable reception to importations from other countries. There were other reasons why self-respecting Englishmen refrained from exhibiting, but these are best forgotten.

DIAMOND JUBILEE GRAPE.—We are requested by Messrs. D. & W. BUCHANAN, of the Forth Vineyards, Kippen, by Stirling, N.B., to print the following expression of opinion concerning this new variety of Grape.

"We, the undersigned, have examined fruit and foliage of Diamond Jubilee Grape, exhibited by Messrs. Buchanan, Forth Vineyards, Kippen, and fruit and foliage of Black Monro Grape from Easton Castle Gardens, at the great fruit show held at Glasgow on September 1 and 5, and are confident that both are distinct varieties; and desire to express our opinion that the Diamond Jubilee Grape is a distinct acquisition, of commanding appearance and splendid flavour.

George Binyard, V.M.H., F.R.H.S., Chairman, R.H.S. Fruit Committee, James McIndoe, V.M.H., F.R.H.S.	James Hunter, Lambton, Judge, James Whytock, Bideketh, Judge, James Dawes, Biddulph Grange, Congleton, David Murray, Culzean, Maybole, James Hamilton, Mander- ston, McIntyre, The Glen, Innerleithen."
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STOCK-TAKING: AUGUST.—The Trade and Navigation Returns for the past month show a falling off in both imports and exports as compared with those for the same period last year. The decrease on imports is £1,159,919, and £779,054 on exports. The falling off in imports is to be found in tea, sugar (refined and unre-

finéd), and in wines. The other and principal decline is in the values of raw materials used in sundry trades and manufactures. The loss in exports is spread over nearly all the sections. The following are our usual exports from the summary table of imports:—

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value	42,477,056	40,967,119	-1,510,937
A. Articles of food and drink—total	15,997,223	14,029,129	-1,968,094
B. Articles of food and drink—total	4,256,353	3,703,199	-553,154
Raw materials—total	11,875,717	11,287,711	-588,006
Raw materials—total	1,258,347	9,785,292	+8,526,945
A. Manufactures—total	11,233,396	11,302,555	+69,159
B. Manufactures—total	10,975,049	11,741,000	+765,951

Possibly in the matter of sugar, we have reached the close of the pre-Budget rush for a market. The figures relating to the imports of fruits, roots, and vegetables are this month exceedingly interesting, especially in the matter of "minims" quantities. They are as follows:—

IMPORTS.	1900.	1901.	Difference.
	QWTS.	QWTS.	QWTS.
Apples, fresh	1,016	1,095	+79
Apricots, fresh	108	179	+71
Blackberries, fresh	258	24,047	+23,789
Cherries, fresh	2	5,218	+5,216
Citrus fruits, fresh	1,041	1,041	—
Guavas, fresh	2	14	+12
Oranges, fresh	1,075	110,826	+109,751
Pears, fresh	1,130	131,158	+130,028
Raspberries, fresh	1,130	1,220	+90
Strawberries, fresh	1,158	9,314	+8,156
Walnuts, fresh	144	7,477	+7,333
Berries, fresh	1,047	129,810	+128,763
Plums, fresh	1,099	1,099	—
Stoned plums, fresh	146	146	—
Unstoned plums, fresh	1,088	18,725	+17,637
Other fruits, fresh	1,099	11,062	+9,963
Apples, dried	1,099	1,099	—
Vegetables, raw—total	1,099	1,099	—
Onions	1,099	1,099	—
Potatoes	1,099	1,099	—
Tomatoes	1,099	1,099	—
Vegetables, raw—total	1,099	1,099	—

That much more good fruit would find a ready market goes almost without saying, and our friends across the Atlantic are making preparations for an endeavour after a bigger share of our custom. Choice British fruit will ever be first in the field, and growers will ever find their reward in improving their cultures as far as possible. The figures for the import values of the past eight months foot up at £316,318,351, against £397,967,068 for the same period in 1900, or an increase of £8,351,285. In the matter of

EXPORTS.
We have to acknowledge a fall of £779,051—£24,205,569 against £24,981,623 for the same period last year. As we have said, this reduction is divided amongst eight of the eleven sections, three showing an appreciable increase. For the eight months the loss as compared with the same period last year is placed at £6,521,206. Every now and again we are promised a "boom" by some speech-making

men in authority. This cannot well take place whilst matters remain as they are in South America, the Cape, China, and elsewhere.

"FLORA OF TROPICAL AFRICA."—We are pleased to notice that the publication of this valuable work is now proceeding steadily. The newest section, vol. viii., part 2, deals with *Ardisceae* (continued), *Lenneaceae*, both by Mr. X. E. BROWN; *Alismaceae*, by Mr. C. H. WRIGHT; *Naiadaceae*, by Mr. ARTHUR BENNETT; *Eriocaulaceae*, and *Restiaceae*, both by Mr. X. E. BROWN; and *Cyperaceae*, by C. B. CLARKE.

PLANT BREEDING CONFERENCE, 1902.—The following preliminary programme of subjects for the proposed International Conference on Plant Breeding and Hybridisation, to be held in the fall of 1902, by the Horticultural Society of New York, has been issued over the signature of Dr. BRITTON, the Chairman of Council. The exact dates for the meetings are not yet decided upon, and the programme as given is subject to alteration:—

1. *Results of Hybridisation and Plant Breeding in Canada.* (Illustrated by specimens.) WILLIAM SAUNDERS, Director of the Experimental Farm, Ottawa, Canada.
2. *Notes on Plant Breeding in California.* E. J. WICKSON, horticulturist, Agricultural Experiment Station, University of California.
3. *Plant Breeding in New Jersey.* (Illustrated by specimens.) B. D. HALSTED, Professor of Botany in Rutgers College, New Brunswick, N.J.
4. *Hybrid Plants.* F. A. WATSON, horticulturist, Vermont Agricultural Experiment Station.
5. *Variations in Hybrids Not Appearing in the First Generation, but Later.* E. S. GORT, horticulturist, Agricultural Experiment Station, University of Wisconsin.
6. *Results in the Breeding of Species of Ricinus.* E. MARY MILTON, botanist, Oklahoma Agricultural Experiment Station.
7. *On Orchid Hybrids.* (Illustrated by specimens of the parents and progeny.) OWENS AMES, Ames Botanical Laboratory, North Easton, Mass.
8. *The Wild Hybrids of the North American Flora.* (Illustrated by specimens of the parents and progeny.) DAVID GEORGE, Museum Aid, New York Botanical Garden.
9. *Hybrid Beans.* R. A. EMERSON, horticulturist, Agricultural Experiment Station, University of Nebraska.
10. *Cytological Aspects of Hybrids.* W. A. CANNON, Columbia University, New York City.
11. *Correlation Between the Fruit and Other Parts of the Plant in Form, Colour and Other Characteristics.* (Illustrated by specimens.) S. A. BLANCH, horticulturist, New York State Experiment Station, Geneva, N.Y.

Other papers, the titles of which have not yet been communicated, are also promised from various experimentalists. Further particulars will be made public as arrangements are concluded. For information relative to the Conference, address all correspondence to the Secretary, LEONARD BARRON, 136, Liberty Street, New York, August 21, 1901.

Mr. W. BATESON, M.A., F.R.S., and Mr. GEORGE NICHOLSON, V.M.H., have consented to represent the Society at the Conference.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At the meeting, on September 2, of the Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique of Ghent, the following Certificates of Merit were awarded:—For seedling *Heliotropes*, from M. VAN DRIESSCHE; *Dracena Vanden Berghel*, from M. ARTHUR STANDAERT; *Catseum fibri-ferum* (var. *Cogniauxii*), from Count J. DE

HEMPTINNE; for *Cattleya aurea* (*par acclamation*): *C. Eldorado alba*, and *C. granulosa* var. *Byssenianna*, and for *C. Wavriniana* (*C. gigas* × *C. granulosa* Schofield (*à l'unanimité*)); also for *Laelio-Cattleya elegans*, for *Cattleya Patrovini* (hyb. nat. *C. Lodigesi* × *C. guttata* var. *Leopardina*), for *C. Ella* (*C. bicolor* × *C. gigas* (*par acclamation et avec félicitations du jury*)); *C. Warszewiczii* (*gigas*) var. *Gloxy*, *C. Fowleri* (*C. guttata* var. *Leopoldi* × *C. Hardyana*), *C. granulosa* var. *aurea* (*à l'unanimité*), *C. Eldorado alba*, and for *C. guttata pernambucensis*; all these *Cattleyas* being from the Marquis DE WAVRIN. A Certificate of Merit was also given for *Odontoglossum* hyb. var. *Theodore Panwels*, from M. TH. PANWELS. Awards for cut flowers were allotted:—for *Lilacs*, from M. F. VAN DRIESSCHE; *Cactus Dahlias*, from M. BÉVENICHE, père (*à l'unanimité*); and for *Cactus Dahlias*, from M. FRANÇOIS NAGELS, of Wilryck, Antwerp (*par acclamation et avec félicitations du Jury*). Certificates for cultivation and flowering were awarded to M. F. VAN DRIESSCHE, for *Datura alba*, and for six varieties of *Thunbergia alata*. M. L. HENXO-DELBOSSÉ, of Tonnai, received Honourable Mention for cut flowers for his *Cactus Dahlias*. M. F. VAN DRIESSCHE, Honourable Mention for cultivation and flowering for *Salvia splendens* compacta, and for two *Eupatoriums*; and M. J. VANDE KERCHOVE for *Persea gratissima* avocetier grown in a bottle.

HOME CORRESPONDENCE.

STRAWBERRY ELEANOR.—We hear and read so much nowadays regarding the merits of new varieties of Strawberries, that we are apt to forget the good qualities of many of the older ones. We now depend at Stoneleigh for our chief supply upon Royal Sovereign and Sir Joseph Paxton, and as a late one, on Eleanor, which is far in advance of other late-fruited varieties. Laxton's Latest-of-All is practically over with us before Eleanor is at its best. We have a border on the north side of a wall planted with Eleanor, which affords many good dishes after Latest-of-All has ceased to fruit, and both varieties are treated alike in every respect. The flavour of Eleanor is very good, though somewhat sharp, but this acidity is not disliked, especially as the fruit comes to table at a time when the Strawberry season is practically past. The fruit is soft, hence it requires to be carefully handled, and each fruit must be wrapped in a soft leaf if sent to a distance. I can confidently recommend this good old variety. *H. T. Martin.*

MANURING.—Any contribution from the pen of such an able authority as Mr. J. J. Willis on horticultural soils and manures is always especially valuable. I read his notes on Basic Slag recently with much interest. There is, however, one portion which I think calls for some further remarks, he says: "In some cases, where the application of basic phosphates has not seemed to produce any marked effect, we think it probable from the results obtained in the grass experiments at Rothamsted, that the soil is deficient in potash," and he supplements this by comparing results obtained from experiments between a plot manured for four or five years, one with basic slag alone, and another where basic slag and sulphate of potash has been applied. This is very well as far as it goes, and may apply to lawns, meadow lands, or grass orchards, under certain conditions, but perhaps not so much to general garden practice. During last July and the early part of August, a discussion on "Manuring," between Professor Wrightson and Dr. Bernard Dyer, appeared in the pages of the *Agricultural Gazette*. Professor Wrightson says: "The greater abundance of potash in soils, as compared with phosphoric acid, and the fact that hay, straw, haulm, and

artificial foods contain it in abundance, are the principal reasons why experiments with potash salts seldom give satisfactory results. Potash salts seldom do good, and sometimes do harm. As a rule, good ordinary managements, liberal feeding, and the use of phosphates and nitrates, fulfil all the conditions for successful manuring. Even nitrates may be dispensed with, where oil-cake is fed, and a great head of stock is main aimed. The great art of manuring is therefore reduced to two principal parts, namely, plenty of live-stock, and the use of phosphates." He also says, "These two classes of artificial manures may be called the right and left arms of the system of artificial manuring. Phosphates and nitrates divide the field, and there is comparatively little room for potash as a manural substance." Professor Wrightson was dealing with farm-manuring; but farm and garden soils and manures are so closely allied that almost the same conditions apply to both. The garden has the advantage over the farm in deeper and better tillage, and generally in the more liberal supplies of fold-yard manures. Such soils are rich in available potash, possibly without the addition of further supplies; but basic slag could with advantage be added, not only on account of its phosphoric acid, but also the larger proportion of caustic lime which it contains would act beneficially on such soils as these, except, perhaps, those of the shallow limestone. It is, therefore, a question whether the addition of artificial potash manures to fairly good supplies of fold-yard manure is productive of good economical results; that is, as far as the supplies of potash are concerned. With the exception of Potatoes, very few elaborate manural experiments are being carried on in this country on garden crops. I hope this will be remedied in the near future, as we have yet much to learn in the way of economical garden manuring. I have before me some tabulated results of experimental manuring of agricultural crops, and I particularly notice that the application of artificial potash manures with fold-yard manure gives very little increase of crops over that of fold-yard manure alone, or fold-yard manure with other artificial fertilisers, excepting potash; in others there is a marked decrease where potash has been added. I am comparing results from a number of experimental stations and different soils. These vary very much. The different varying conditions in soils, position and climate, possess great influence upon results obtained from experimental manuring, that it is very difficult to generalise. Perhaps economy in garden manuring may often be only a secondary consideration, but where the application of any artificial fertilisers to the soil has been shown to be sometimes harmful, as Professor Wrightson says of potash-salts, and as various experiments show, great care should be exercised in using them. *Alfred Gant, Leeds, 61, Belle Vue Road.*

DESTROYING WASPS.—When I penned my few remarks on my method of destroying wasps (see p. 128), I thought they might be of service to your correspondent, Mr. Simpson, but it appears he has a plan of his own, which differs from mine, inasmuch as the wasps destroy his Peaches, Grapes, &c. (see p. 111), and in my case the wasps lay dead in thousands, and the fruit is practically intact. As to the time it takes, it only occupies ten minutes of my time every morning to replenish the vessels. I did not recommend the advertised wasp destroyers, as I have had no experience of them, but only my own preparation and the manner of applying it. I have noticed that some of the wasps only remain sipping a few seconds, and in order to ascertain if they returned, I have, on their departure, dredged them with flour, but not one returned. This is a good way to discover the direction in which their nests lie, for they can be seen more readily, and for a greater distance, and in some instances followed home, as their movement is not rapid after being floured. I do not know if the wasps eat their comrades that

may happen to reach home to die, but, since writing to you on the subject, I watched a wasp devour a poisoned fly, after first clipping its wings as if with a pair of scissors, and it crawled till it died. If the wasps are allowed to make a good start on a houseful of Grapes or other fruit, it takes longer to entice them to the mixture, and I have seen where bottles containing all kinds of tempting mixtures (including honey) have been hung up, the wasps have been as attentive to the fruit as before, and this seems to be Mr. Simpson's experience. A week ago they commenced to devour the Green Gages here; though not half ripe, three fruit were already shelled. I immediately hung a vessel in the tree, picked the damaged fruit, and put them in it, for they like something to alight on in the liquid, and in a couple of hours there was scarcely a wasp to be seen on that tree. I may add that I have tested the wasps with bones and scraps of fish placed side by side all kinds of sweet things, and have had to move the former to the vessels to get them to the mixture. *W. P. Roberts, Uerden Hall Gardens, Preston.*

THEFT OF APPLES.—It may interest judges at flower shows to know, that last Saturday night somebody went into my garden, and carefully took from two trees of Peasgood's Nonsuch a dozen or so of the very finest of the Apples. They were specially good samples, and it is probable that they were only taken to be sent to a show somewhere, as the thief most carefully selected those without any blemishes, leaving the rest of the trees. I know that in many shows growers have to vouch that the fruit they exhibit is their own, and grown by themselves, and I therefore felt that it would be well to give these facts to any of your readers who may be judging, and have any doubts of a lot of the above Apple. *C. J. Morgan, Hulswood, Durlford, Kent.*

HOME GROWERS AND WATER MELONS.—One gets such an unpleasant experience of Melons at the Fruit Committee's table at the Drill Hall, that I hesitate to partake of the Water Melons sold so cheaply in shops. But recently, when in Edinburgh, Mr. Metlattie, with whom I was taking tea, invited me to partake of one, and so nicely flavoured and generally good was it, that it greatly exceeded scores that come to the Drill Hall as seedling crosses for awards. The very best home-grown Melons I ever taste, whether new or old varieties, are from plants grown in very limited ranges of soil in houses where there is ample light, some ventilation, no excessive damping, yet no red-spider is in evidence. Were all imported Melons as good as the one I tasted, I fear few Melons would be grown at home. *A. D.*

SWEET PEAS IN THE NORTH.—Very remarkable to me, remembering how we had suffered from drought in the South, were the Sweet Peas in the nurseries at Rothsay, for they were over 6 feet in height, in every case green and vigorous, full of bloom with buds from bottom to top, and almost seedless. Surely Rothsay must be for the Sweet Pea a perfect paradise. Messrs. Dobbie & Co. had overcome the difficulty of obtaining proper branch sticks in a locality not overwooded, by fixing along the rows at intervals stout supports, to which were fastened lengths of large-mesh wire, 6 feet deep. A larger mesh than 4 inches would have been preferred, but it was not obtainable. However, a first-rate form of support was thus obtained, the Peas enclosed in the wire sides being secured from the strongest winds. *A. D.*

"THE ROYAL HORTICULTURAL SOCIETY'S JOURNAL."—The recipients of the latest issue of this valuable work should be greatly gratified by the addition thereto of a voluminous series of pithy extracts or abstracts from the home and foreign horticultural and botanical press, which forms a very practical index to the more recent discoveries and interesting records. These are arranged alphabetically, according to the plant or plants or particular

branch of research concerned, and hence, by simply glancing through the sub-headings, every specialist can perceive what has been done in his particular line during the three

months covered by the periodicals concerned. The numbers and pages of these being also given in conjunction with the author's name, and the pith of the matter published, reference to same for further details is rendered easy. No idea could be conceived which is

better calculated to bring the horticulturists and botanists of the world into closer communion, and their thanks are certainly due to the indefatigable secretary of the Society, the Rev. W. Wilks, not merely for conceiving the idea, but for the very practical way in which he has arranged the matter provided by himself and the numerous gentlemen who have kindly volunteered to assist him. The names, which are given, as well as the long lists of cosmopolitan publications from which the abstracts are taken, demonstrate not merely that the matter is thoroughly and intelligently selected, but also that their field of research is an ample



FIG. 63. CATTLEYA PUBERULA (MENDLE); A ROSE-COLOURED FLOWER WITH A YELLOW BLOSSOM AT THE BASE OF THE LIP. (SEE P. 201.)

months covered by the periodicals concerned. The numbers and pages of these being also given in conjunction with the author's name, and the pith of the matter published, reference to same for further details is rendered easy. No idea could be conceived which is

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opolitan publications from which the abstracts are taken, demonstrate not merely that the matter is thoroughly and intelligently selected, but also that their field of research is an ample

contact with each other, and by the consequent exchange of views which results. Each one reaps some knowledge from the others, and this interchange of views undoubtedly frequently brings about those combinations of ideas from which many of our greatest discoveries have sprung. A mass of information is brought together, the individual quotas of which, when isolated, constitute mere natural enigmas which the single specialist is unable to solve. The conjunction of many, however, reveals coincidences and agreements which often give the clue to theories which eventually, by the research thus guided into distinct channels, resolve themselves into laws of the utmost importance. The abstracts and short articles on research which we are considering go very far in this same direction. Hitherto, to achieve the same end by individual search through contemporary records was practically impossible, since it involved the necessity of the reader being in every case master of several languages, apart from the fact that several scores of publications (some of them expensive) require to be perused attentively, while the items of particular and individual interest may be like the proverbial needles in a bottle of hay. Another special feature of the issue under consideration is the opening translation of Mendel's paper on the "Law of Hybridisation," a paper which, unfortunately, almost fell into oblivion entirely, owing to its form of publication, though, as will be seen by perusal, it is of such an epoch-making character, that the Royal Horticultural Society richly merits the thanks of all Englishmen for facilitating their knowledge of it by the translation given. To whom I refer for details, *Chas. T. Druery, F.R.S., V.M.H.*

A VETERAN FLORIST.—When visiting a few days since at Rothsay I had the pleasure of meeting that octogenarian florist, Mr. James Dobbie. The old gentleman is now in his eighty-fourth year, and is surprisingly robust, vigorous, and full of energy and vivacity. He resides in a handsome villa on the Craigmore side of Rothsay, from whence a splendid view of the noble bay of that name, the harbour, and the lofty hills beyond and far in front are seen. He still employs much of his spare time in the cultivation of flowers and vegetables, especially Kalea and Leeks. No longer associated with the big business now built up, and which retains his honoured name, he is still an enthusiastic florist and gardener. We may well honour these veterans of horticulture, of whom Mr. Dobbie is not the least famous. *A. D.*

IRIS KÄMPFERI.—When calling recently at Haddon House, Exeter, the seat of J. F. Bannatyne, Esq., my attention was directed to a fine mass of this Iris by Mr. Elliott, the genial gardener there. The plants under notice are growing just below a small stream, and Mr. Elliott informed me that they were imported direct from Japan, and planted about eighteen months since; they flowered profusely this summer, many of the blooms measuring 11 inches. There was ample evidence of this from the quantity of flower-stems, and a few blooms on the plants at the time of my visit. The plants were the picture of health, some 3 feet or more in height. They are growing in the natural soil—light loam—to which was added equal parts of leaf-soil and peat. They were flooded by a small trough from the stream near by a fortnight before flowering, this being the only artificial watering given them, and mulched last winter with some stable-manure. A glance through the vinerys showed some good bunches of Black Hamburgs, and also Muscats, on the young Vines planted during the past four years which would make Mr. Elliott a formidable opponent if placed on the exhibition boards. There is a decided improvement in the place generally since it was acquired by the present owner. *Paul T. More.*

THE AUTUMN SQUILL (SCILLA AUTUMNALIS).—It will be of interest for botanists to learn that this rare plant is still to be found wild in

the London district. Yesterday I saw a single colony of probably fifty specimens; but, unfortunately in another station it has become extinct through the formation of golf links. As this plant is unknown in Scotland or Ireland, and only crops up in a few stations in southern England, its London home is all the more cherished and zealously guarded. It frequents the most arid, staked verdure. Another equally rare plant, *Sphranthes aestivalis*, supposed only to occur in the New Forest, is also to be found wild in the London radius, and in such quantity as to preclude the possibility of its becoming exterminated for some time at least. *A. D. Webster, September 9, 1901.*

MR. ROBERT FENN.—I had the pleasure of seeing this old Potato-raiser at his Sulhamstead home a few days since. I found him exhibiting a marvellous condition of recovery from his broken-leg accident of last year, for he is now, even at the great age of eighty-four, as active and energetic as at any time. Since he has been at Sulhamstead, neither age nor accident has in any way withered his intense Potato enthusiasm, for he is still raising new varieties, and curiously enough from a species which has apparently never before been so utilised in England. It is many years since that the famous American raiser, Mr. Pringle, sent over to Mr. Fenn small tubers of the North American Solanum Fendleri, indeed the date is about fixed because accompanied by one tuber of Snowflake, a once famous American variety. Some seventeen years elapsed ere it was possible to obtain a cross with that species, and then a cross was secured with Rector of Woodstock. Then later was effected a further cross, the species being the seed parent with pollen of Woodstock Kidney, and from these crosses have come some capital dwarf top early seedlings. One especially, provisionally named Kate, a flat-tish kidney, is exceedingly promising and handsome. Four years ago Mr. Pringle sent seed of yet another and comparatively unheard of species, which bore the comprehensive appellation of Solanum bulbocastanum (Danal, native of Guadalupe, Old Mexico). This gave plants having dwarf tops, and Sego-like leaves. Crosses were effected with one or two garden varieties, and the produce in numerous seedlings is now being grown and tried in Mr. Fenn's garden. How they will turn out time alone will show. Top growth varies considerably, some being dwarf and early, some tall and of rather wild aspect. It is interesting to note that there are good growth and crops associated with some of the old Woodstock Seedlings, that have been grown in the same ground for twenty-five years. *A. D.*

LILIUM AURATUM.—I enclose a photograph of a *Lilium auratum* now in flower in garden at Aubrey Villas, Penzance; as you will perceive, an extraordinary specimen, so much so that it has drawn the attention of all the gardening people here, and many others interested in horticulture. One bulb only, purchased at a local nursery for 2s., was planted where it is now four seasons ago. No particular attention was given it at the time or since; it has never been disturbed, and nothing done to it except staking. The first season it threw up one stalk carrying twenty-five flowers, the second and third seasons two stalks with seventy-five flowers, and 8 ft. 6 in. high; this, the fourth season, it has three stalks of about equal size and height, and carrying 112 flowers; it is clothed in glossy dark green foliage from bottom to top, the leaves being 10 inches long by 2 inches wide, the girth of the stalk is $4\frac{1}{2}$ inches, and the plant 10 feet 2 inches in height. You will notice in the photograph the figure of a man who is 5 feet 8 inches, thereby showing the comparative height of the plant. It is thought here generally that no such specimen is likely to be seen again in this country. I may add the perfume from it scents the whole neighbourhood, especially at night. *Henry Heath.* [An excellent specimen, but as others even more remarkable have been figured in

our columns on various occasions we do not think it necessary to reproduce the photograph our correspondent has been good enough to send us. Ed.]

A NEW WORM-KILLER.—Mr. John Freeland, a gentleman well known and esteemed in fishing circles in Aberdeen, has just come forward with what not a few think is a very valuable suggestion. As is well known, the jelly-fish of the sea is considered to be a nuisance by fishermen in general, including salmon fishers; but, nevertheless, Mr. Freeland holds that the jelly-fish has very great value, and is surprised that the benefits to be derived from it have not ere this time been recognised. Grub and worms have been a source of annoyance to gardeners from time immemorial, and it is for the benefit of the latter that Mr. Freeland puts forward his suggestion. He holds that the jelly-fish taken from the sea and applied to the land will have the effect of exterminating worms of all kinds. Of course, jelly-fish alone will be too strong, and must be mixed with earth or some other ingredient. Anyhow, Mr. Freeland wishes some enterprising gentlemen to take the matter up, and for his part he will be delighted to give all the information his experience and practice of the sea have put in his power. His address is Torry, Aberdeen. *W. Killy, Aberdeen.*

PLANTING POTATOS.—Some time in the early spring, I wrote it was just possible that the size of the tubers of the Potato might be lessened by the habitual selection of small-sized tubers for seed or planting. Acting on this belief, I caused a row of full-grown large ones, and another of the usual "seed" size, to be placed side by side. The sort selected was one known about here as Snowdrop, and a good cropper. As is well known, the season has been exceptionally dry—so much so that the yield has been very poor, and the return unprofitable, most of the tubers being so small as to be only saleable for poultry or stock-feeding. However, I was agreeably surprised to find that the row of the larger tubers not only much exceeded the smaller in the strength and growth of the haulm, but the crop was more, and the tubers of a far better size, with fewer small ones; while, also, the row of the small seed Potatoes seemed to suffer more from the drought, which my man said was "accounted for by there being more moisture to feed on in the bigger ones." Be this as it may, there was a decided difference, and this in favour of the larger "sets." I merely mention this, not so much as a proof, for on so small a scale it is not that, but as a tried experiment, and that for the consideration of others as to whether they will follow it up another year. *Harrison Weir.*

LILIES FROM SEED.—About three months ago, at a meeting of the Scientific committee of the Royal Horticultural Society, a question was raised whether Lilies ever grew from seed to flowering size without making any leaves above ground. I said that I believed this had happened in my garden in the case of *L. monadelphum*, and that I hoped careful observations on the subject would be made. I have now collected about half a pound of seed of *L. monadelphum*, and will send a packet of it to everyone who may be willing to spare a square yard of their garden to sow it in, and to make continuous observations of the surface during spring and summer for the next four years, keeping it clear of weeds. The seed will be sent on application to me. *C. Wolley Dod, Edge Hall, Malpas.*

ENQUIRY.

WILL some fellow-reader advise me what to plant in a wilderness near the riverside, flooded in winter time, baked in summer, soil alluvial, resting on London clay? Plants of bold aspect, like the Gunners, and of proved hardihood, are required. *X.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 12.—The Drill Hall, Buckingham Palace a much greater appearance than on the occasion of the previous meeting; the exhibits were of greater general interest, and the number of visitors greater. The chief features were hardy herbaceous perennials, which seem to get more popular every year. Dahlias of Cactus varieties, Ferns, and Selaginellas, of which latter there was a remarkable exhibit from Mr. GREENE FOWLER, and hardy fruit.

Floral Committee.

President.—W. Marshall, in the chair, and C. T. Dreyfus, H. B. May, H. Selvie Leonard, R. C. Nottent, E. Molyneux, J. F. McLeod, J. Jennings, C. Dixon, W. Bain, C. Jenkins, C. E. Pearson, H. Cutbush, H. J. Jones, E. J. Jenkins, W. J. James, G. Paul, C. Black, J. W. Hill, J. Walker, G. Nicholson, J. Hinds, H. P. Roberts, and J. Ed. Mawley.

TABLES.

H. CANNELL & SONS, Swanley, Kent, occupied the entire length of a long table on one of its sides with bunches of Cactus Dahlias in great variety. The most of voluted-petalled flowers predominating. We may mention, among many pretty flowers, Camellia Crested, a deep crimson, Lovely Egneston, orange-colored, Major Weston, velvety crimson, Mrs. John Pully, W. Treseder, white, standard Boreas, scarlet, W. Jovett, similar in tint; Mrs. Sanders, lemon yellow, Vestal, rosy carmine; Eclair, orange-scarlet; Cornucopia, soft cerise, Mrs. Carter Page, crimson, Falke, and J. W. Fife, rich narrow gold Medals.

MR. R. C. NORCELL, Wood's Nursery, Woodbridge, showed a number of varieties of Cactus Dahlias, most of which were new.

Messrs. J. CHEAL & SONS, Lowfield, Singley, Crawley, showed a number of Pompano, single-flowered and Cactus Dahlias. Many varieties obtained Awards of Merit, and the descriptions of these flowers are given in our award list.

HERBACEOUS PERENNIAL AND BI-COLORED PLANTS.

MR. PRICHARD, Christchurch, Hants, showed a quantity of handsome hardy herbaceous perennials, Ac, which grow so luxuriantly in the rich friable soil of Christchurch. Of novelties, mention may be made of *Gladolus* Baron J. Hubot, a purple self and a pink variety, named *Vesuvius*, *Rudbeckia purpurea*, the pretty *Veronica exaltata*, which has flower spikes inches in length, *V. submissa*, *Helianthus collis*, *Rose Souvenir de Catherine Guillot*, a flower of salmon buff tint, *Colonia obliqua* alba, *Buddha varabalis*, *Boltonia longata*, *Rudbeckia Lyallii*, of a bloom of a soft tint of yellow, and numbers of handsome shrubby *Phloxes* (Silver Bankian Medal).

MR. THOS. S. WARE, Hale Farm Nurseries, Feltham, Middlesex, showed hardy plants in great variety. We noted, among the rarer subjects of merit, *Stokesa cyanea*, *Lithum speciosum purpureum*, and other varieties, *Arantia grandifolia*, the flower of a deep blue colour, *Gladolus* Fane Buchanan, of a pale lawn tint, varnished with a new rose-colored stripes, the light blue flowered *Delphinium Bellodiana*, a shrubby *Phlox* with bright tints, *Milla bellifera*, flower grasses of *Polygonum Baldschuanum*, the whole being backed by plants of Bamboo in pots. The exhibitor had numerous cut spikes of China, but no special award was made (Silver Flora Medal).

Messrs. BAIRD & SONS, King Street, Covent Garden, W. C., had arranged a very extensive exhibit of hardy flowers, consisting of many perennial and annual Asters, *Gladolus*, *Amargilly*, *Bellodiana*, *Nymphalids* floating in vessels of water, of which we may notice *N. Robinsoni*, a flower of a deep cream tint, which is darker at the centre; *N. Andreama*, *N. James Brydon*, a new form; and *N. Froebel*, very fine dark colour, but not of large size. *Clematis Ville de Lyon*, *Helianthus* *de Moon*, a fine thing, not so rampant, it is said, as some of the *Sunflowers*, *Gladolus Nuccioans*, *Paella* of a brilliant cerise colour, a number of quite fresh flower spikes of *Kuphobia Pfitzeri*, *Gladolus Lemmonia Proprietas*, white with blood red patch. The firm also showed some plants in a pair of *Patera* repens in fruit (Silver Bankian Medal).

MR. AMOS PEARCE, The Hardy Plant Farm, Wincmore Hill, showed extensively in the hardy herbaceous plant line, and had many good subjects, of which we may mention *Gentiana Andrewsii*, with very dark flowers, appearing in compact terminal and axillary corymbs,

German *concolor*, a large plant, *Chrysanthemum virginicum*, a dwarf plant, with yellow blossoms of the size of a shilling; *Eucos* *isopetala*, an old-fashioned plant; *Calliopsis* *Barnwelliana*, *C. liguriana*, *C. chinensis*, *Liatris scariosa* (ragwort), a showy, purple-flowered species; *Perovskia atriplicifolia*, a grey-leaved plant, with twaxy branched spikes of minute blue flowers; *Sonchus pulcher*, *Chelone Lycop*, rosy purple (Silver Bankian Medal).

FERNS, &c.

Messrs. J. HILL & SONS, Barrowfield Nurseries, Lower Edmonton, Middlesex, exhibited a large collection of exotic Ferns, including many that are rare in gardens, and all of them showing excellent cultivation. Good plants were observed of *Brama muscivora*, *Pteris Chelidii*, *Anemia rotundifolia*, *Avallia fijiensis elegans*, *Asplenium marginatum*, *Oxyphium aurantium*, &c. (Silver Flora Medal).

J. GREENE FOWLER, Esq., Ghebeldans, South Woodford gr., Mr. J. DAVIS, exhibited a very excellent collection of Selaginellas. The plants included most of the species and varieties to be found in trade lists, and were in excellent condition. We may mention such rare species as *S. Griffithii*, *S. Bruma*, *S. peregrinus*, *S. vialla*, *S. erythra purpurea*, *Victoria*, *S. idemita*, *S. aranea*, *S. scandens*, *S. pinnatifida*, *S. flaccidifolia*, *S. Lobbii*, *S. Schottiana*, &c. The exhibitor spoke well of the cultural skill of Mr. Fowler's gardener (Gold Medal).

MISCELLANEOUS.

Messrs. W. PAUL & SON, Witham Cross, exhibited beautiful baskets of *Fo. Roses*, in fine condition, considering the season, such as *Bounty*, *Fairy Queen*, *Redbird*, *Queen of May*, *Excelsior*, &c. (Silver Bankian Medal).

MR. H. J. JONES, Royal Nursery, Lewisham, S. E., showed a collection of Mr. J. H. DAVIS, growing in pots of some inches, and in which the plants mostly with numerous flowers still unopened, so that they did not admit of description. They probably do not do so very pretty and pleasing as *Aster Nov. Belin*, *patula*, *pinnaefolia*, *gladius rosea*, *Novae Angliæ*, *N. A. Mrs. J. F. Layner*, rosy purple, a large flower, umbellatus, flowers creamy white, and good for cutting, *Noxæ Angliæ*, *Proceris*, purple, &c. This useful class is certainly taking the place it deserves in the border, and as pot or rather tub plants.

Messrs. W. WELLS & CO., Earlswood, Reilly, showed flowers of the so-called flowered *Chrysanthemum* *Milford* (various), and those of open ground, the flowers being white, with yellow, blue, and measuring 4 inches in diameter.

J. WARRIS, Esq., Head of Park, Crawley, Mr. A. other, showed a large and well-edged *Deucalia*, named *Chloe*. The plant has a general resemblance to *D. rotundifolia*, but the red tinge in the stripes are more marked than in that variety. The plants were well grown, 2 feet high, and clothed with leaves to the base.

Messrs. J. VETTER & SONS, LTD., The Royal Exotic Nurseries, Chelsea, showed a number of plants of *Lithum Henryi*, a deep rose-colored, much reflexed flower, the stems measuring 2 to 4 feet in height.

JOHN LAING & SON, FINE FINE Hill, London, S. E., showed a massive group of well-flowering *Chrysanthemums*, and forty-eight cut Rose blooms of fine quality, H. P. & Co. (Silver Bankian Medal).

MR. JOHN RUSSELL, Royal Exotic Nurseries, Richmond, Surrey, arranged in a corner of the hall a pleasing group of woody plants, consisting almost solely of foliage subjects, such as *Codæa*, *Abrotanus*, *Dicentra*, *Diethelmiaebus*, *Begonia*, *A. diels*, *Caladiums*, *Pahus*, *Helleborus*, and a quantity of small-growing species as a margin to the group (Silver Bankian Medal).

FINEST CLASS CEREALIAES.

Nyctelia Decolorata.—A flower 7 inches in width, of a bright pink colour throughout, and the petals expanding to the fullest extent. Grown out of doors at Burford. Shown by Sir THOMAS LAWRENCE, Bart., Burford gr., Mr. W. BAIN.

Kochia scoparia, noticed in a previous issue. Shown by Messrs. CANNELL & SONS, Swanley.

AWARDS OF MERIT.

Tree Carnation P. Crowley.—A deep pink self Carnation, with a Peacock edge. Shown by Mr. H. J. JONES, Ryecroft Nursery, Lewisham.

Chrysanthemum Tomber's Crimson.—A chestnut brown flower, well built, with reflexed florets, 6 inches in diameter, rather flat, with a full centre. Shown by Messrs. W. WELLS & CO., Earlswood, Reilly.

Chrysanthemum Orange Mrs. C.—A semi double flower, of an orange or rather buff colour, and with slightly

no living florets. Shown by W. WELLS & CO., Earlswood, Reilly.

Trio Rose Salmon.—Pink, with a frunter tint in the centre, very free. Shown by Messrs. W. PAUL & SON, Waltham Cross.

Cactus Dahlia Modestus Linnæ.—With yellow and orange-colored florets. Shown by Messrs. J. CHEAL & SONS, Crawley.

Cactus Dahlia Escudæ.—A flower of a crimson colour and thread like florets. Shown by Messrs. J. CHEAL & SONS, Crawley.

Præcox Dahlia Cæsus.—A neat, light purple-colored flower, the interior of the florets being silvery white. Shown by Messrs. J. CHEAL & SONS, Crawley.

Cactus Dahlia E. W. Bolding.—Oranges-carlet florets, having creamy-white tips. Shown, like all the following five varieties, by Mr. J. STRICKWICK, Silverhill Park, St. Leonards-on-Sea.

Cactus Dahlia Alpha.—Florets white, spotted and striped with crimson.

Cactus Dahlia Richard Dean.—A flower with scarlet coloured florets having white tips.

Cactus Dahlia Linnæ.—A flower having lilac-colored florets tipped with white.

Cactus Dahlia Mrs. Westoby.—A brilliant scarlet coloured flower.

Cactus Dahlia Khalis.—A flower of a deep orange colour.

Cactus Dahlia Ophir.—An orange-colored flower, turning to yellow towards the centre. Shown, with the three following, by Messrs. WILLIAMS & CO., Salisbury.

Cactus Dahlia Amazon.—A flower of salmon pink and yellow tints.

Cactus Dahlia Mrs..—A soft tint of crimson.

Cactus Dahlia Gabriel, of scarlet and white.

Cactus Dahlia Mrs. H. J. Jones.—A flower with imbricated horn like florets, white at the tips, and scarlet below, a striking variety. Shown by Mr. J. T. WEST, Brentwood.

Cactus Dahlia Spillius Queen.—A pure white flower of pleasing build. Shown by Mrs. J. T. WEST, Brentwood.

Solo Dahlia Media.—A variety of a vivid scarlet tint, the finest form, and very regular. Shown by Mr. C. T. BAKER, Royal Nurseries, Slough.

Pycnostachya coccinea rubrovariegata.—An *Amulo* like grass or reed, with foliage boldly striped with long thin bands of white, a height of stems, as shown, about 4 feet. Shown by Messrs. BAIRD & SONS, King Street, Covent Garden.

Helianthus collis.—A single flower *Sunflower* growing to a height of 5 feet, and flowers 2 to 4 inches in diameter, of a soft yellow. The whole plant pubescent, and having a greyish-green appearance. Shown by Mr. AMOS PEARCE, Wincmore Hill, London, and Messrs. WATTS & CO., Colchester.

Trio Rose Madama Berlay.—Colour creamy white, and fringed with pink. Shown by Messrs. PAUL & SONS, Chesham.

Cornua Rubra *Kochian*.—*Facet Hohendolke*.—A flower of a yellow colour, and large size. Plant of dwarf habit. Shown by Sir THOMAS LAWRENCE, Bart., Burford Lodge, Burford.

Behæradiastrum grandiflorum.—Shown by Lord MANTON of Dottedock, Lochgilphead, N. B.

Orchid Committee.

President.—Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (not seen), De B. Crawshaw, H. M. Pallett, W. Cobb, E. Hill, T. W. Bond, H. J. Chapman, W. H. Young, W. H. White, J. W. Potter, and J. G. Fowler.

At this meeting no groups of Orchids were staged, and but few exhibits were entered to go before the committee.

J. GREENE FOWLER, Esq., Ghebeldans, South Woodford gr., Mr. J. DAVIS, showed *Lælio Cattleya* *elegans*, "Ghebeldans variety," a showy form, with flowers shaped like those of *L. C. × schilleriana*, but having the rose and purple tints of *L. C. × elegans*; *L. C. × elegans* "J. Davis," a large-flowered form, with a dark rose-colored labellum; and a good variety of *L. C. × Nya*.

A. SEED SMITH, Esq., Silvermere, Cobham, showed *Lælio Cattleya* *× Zephyra* (*L. xanthina* *× C. Mendelii*).

DE B. CRAWSHAW, Esq., Rosefield, Sevenknights gr., Mr. STABLES, showed cut spikes of *Miltonia Regnellii crinita*, differing from the type in having citron yellow sepals and petals; and *Miltonia* *× Crawshawana*, supposed to

be a natural hybrid between *M. Regnellii* (Crim.) and *M. Clowesii*, a supposition favoured by its bearing brown bars on the yellow sepals and petals, and a slight contraction of the purple lobe when in the middle, indicative of the influence of *M. Clowesii*.

WALTER COBB, Esq., Bickton, Tisbury, Wilt. gr. Mr. J. HOBBS, showed flowers of two very large *Cypripediums*.

Awards.

Cult. in *Hydrum* *Roburiflorum*, from Mr. THOS. ROCHFORD, Turford Hall Nurseries, Brockhampton, Herts.—A very handsome and remarkable variety, with the general appearance of a fine *Cattleya* variety, with white sepals and petals. Among previous-year awarded varieties of *C. x Hardyana*, it comes nearest to the fine *C. x Hardyana* *Statterman*, which received a First-class Certificate, September 29, 1892, and was figured in *Lindley's*, vol. 1, p. 77; but in Mr. Rochford's variety the golden colouring in the lip is confined to the veins, as in *C. Bowiana aurea*, and the median patches of yellow shown in the variety *Statterman* are not present. Sepals creamy-white, with a very slight flush of rose colour. Petals 2½ inches long, and 2½ wide, white, with a very neat freckling of rose toward the tips. Lip broad and finely ruffled, purplish-crimson, with rich gold veining from the base to the centre. First-class Certificate.

Cult. in *Geranium* *granulosum* *Schofieldianum*, *Barbyana*, from Messrs. CHARLES WORTON & Co., Balton, Bradford, Yorks.—A very distinct hybrid, showing a remarkable form of lobe when the distinctly divided lobes, as in *C. granulosum*, which is characteristic of all hybrids with that species. The sepals and petals cream-white, delicately tinged and veined with rose-lilac. The lip has the side lobes of a pale rose colour, the front lobe is projected on a well-defined isthmus, purple, with a lighter shade between the veining, and a slightly granular surface. Award of Merit.

Sophia-Lola *Andrea* *Laelia* *tendrosa* *Sophia*, *nits* *grandiflora*, from Messrs. CHARLES WORTON & Co., Balton, Bradford.—A richly-colored hybrid, with flowers strongly like those of *L. tendrosa* in shape, though much smaller. Sepals lanceolate, purplish-red, tinged with orange colour; petals ovate, acuminate, and similar in colour to the sepals; lip purplish-red, with purple veining. The blending of the colours gives a glowing appearance to the flower, and renders it very attractive. The plant was a small one, flowering for the first time. When stronger, the flowers will improve in size. Award of Merit.

Epithymum pinnatifidum, from J. T. BENNETT-POE, Esq., Holmwood, Chesham, Berks.—An ornamental plant with cylindrical stems, bearing bright green leaves on the upper part, and a terminal three-branched inflorescence of white fragrant flowers. Botanical Certificate.

Fruit and Vegetable Committee.

Present, J. CHEAL, Esq. (in the Chair); and Messrs. C. HEPP, W. BARR, S. MORTIMER, W. RATES, A. DEER, G. KELCH, E. BECKETT, H. BARKMAN, J. WILLARD, J. BASHAM, J. SMITH, G. NORMAN, F. Q. LANE, W. POUQUET, J. H. VACHEL, E. S. BLAKER, and G. WILKS.

There were numerous subjects for notice. From Mr. J. CHOOK, Froble Abbey Gardens, Chind, came in its of POWELL'S Late Apple, rather overripe (Vote of Thanks). Mr. W. F. COBBETT, Exmouth, sent fruit of his new cooking Apple, Venus Pippin, to which an Award of Merit had previously been given.

Mr. C. ROSS, gr. to Captain CALVERT'S, Newbury, sent Apple Ruby, very red in colour, but now over ripe, also Plum "Crump," medium size, pale red in colour, and a cheshnut.

Messrs. JAS. VENN & SONS, Chelsea, put up fine Fruits of the Jules Guyot Pear, which were of poor flavour; also the very large handsome Crab Miss John Seaton, and Langley Damson, in fine form, heavily fruited. The fruits are of the size of those of Rivers' Prolific, but seem to lack Bourjois flavour.

A boxful of fine Diamond Peaches came from Mr. W. CANN, gr. to Captain FORESTER, Battle Abbey (Vote of Commendation).

Mr. E. D. MANNING, Isle of Wight, sent a good-sized Melon, unnamed. Mr. BISHOPP, Dorset, had very fine samples of Williams' Bon Chretien, Renette d'Anjou, and Souvenir du Congrès Pears. Cultural Commendation.

From Mr. J. QUARTERMAN, gr. to A. SMITH SMITH, Esq., Silverdale, Cullum, came well-ripened fruits of *Passiflora edulis*. Vote of Thanks.

Chipp's Favourite Pear, very fine sample, was sent by Mr. BARR, gr. to Sir THEOBALD LAWRENCE, Burford Lodge, Dorset (Vote of Thanks).

Mr. WIGGILL had from the Royal Horticultural Society's Gardens, Chiswick, a rather small Plum, Redrage, but it had little merit.

From Mr. J. HAWKE, gr. to the Earl of JERSEY, Osterley Park, Middlesex, came fine Dr. Hoeg and Grosse Magnonne Peaches, and Souvenir du Congrès Pears. Cultural Commendation.

Mr. G. NORMAN, gr. to the Marquis of SALISBURY, sent fruits of that somewhat spars-fruited Pear Bourne de l'Assomption. A sample of the same variety from Chiswick, when tasted, showed that it lacked flavour (Vote of Thanks).

Mr. SLADE, gr. to Lord PORTMORE, Exeter, had very fine Lady Sudeley Apples and Renette d'Anjou Pears (Cultural Commendation).

Mr. D. S. MELVILLE, gr. to Lord MALCOM, Dalhousie, N.B., sent branches of a very fine Blackberry (Vote of Thanks).

Four dishes of late Peas, to show usefulness, were sent up by ALDERMAN WALKER, of Huddersfield. These comprised Alderman, Captain Cull, No. 10, Ultra, and Sutton's Late Queen (Vote of Thanks).

COLLECTIONS OF FRUIT.

An unusual one of these came from the Society's gardens, Chiswick, and it included seventy-six dishes of Peas, most of them of good size, clean, and handsome, and twenty-five dishes of Plums. The latter included most of the best varieties in cultivation. The exhibit reflected the highest credit on Mr. G. T. WIGGILL and the Chiswick staff. A Vote of Thanks was the only award that could be made. We were delighted to see this exhibit from the old garden, and hope to see many similar.

Messrs. W. PAUL & SONS had a very interesting exhibit in a collection of some twenty-four fruit trees in pots, all well cropped, and many dishes of Plums and Apples. Among the fruit trees were Morella Cherries, full of fruit; Pears, Apples, and Plums. The Hogg Model was unanimously voted to this collection.

From Mr. E. NEAL, gr. to Mrs. NIX, Fillingham, Essex, came a very large representative collection of fruit, pretty set up, including grapes, pears, chutney, Apples, Apples, Apples, and Muscat of Alexandria, very good, also four Melons, numerous Plums, Apples, and Peas, also Morella Cherries, Red Currants, &c. silver gilt Knighting Medal.

Mr. G. KELLY, gr. to Miss ADAMSON, South Lodge, Regent's Park, had a nice collection of fruit, including good Alicante, Black Hamburg, and Abbot of Alexandria Grapes, several good Melons, Peaches, Pears, &c. all of great excellence. Silver Knighting Medal.

Messrs. J. PAUL & SONS, West, Newport, had a very nice collection, comprising fifty-four dishes of good Apples, Pears, and Plums. Many of the latter were the samples. Silver Knighting Medal.

From Messrs. JAS. VENN & SONS, Chelsea, came a superb lot of Plums and Peas, and with these a collection of out-of-door Tomato plants, all heavily fruited, and comprising no fewer than twenty-eight varieties (Silver Knighting Medal).

A collection of some thirty dishes of vegetables was put up by Mr. WILKES, gr. to Lord GERRARD, Eastwall Park, Ashford, Kent; some of the pots, especially carrots, Parsnips, and Beets, showed the effects of the hard soil in which they had grown. There were some good Excelsior and Ailsa Craig Onions, several varieties of Peas, Runner Beans, fine Cauliflowers, &c. silver Banksian Medal.

The Lecture.

The subject of the lecture on this occasion was the "Cactus Ballia and its Evolution" treated by Mr. HUMPHRIES, of Keynes & Co. The lecture was valuable, but would have been more interesting if the speaker's remarks could have been illustrated by reference to some of the many varieties exhibited in the hall on this occasion. Mr. HUMPHRIES sketched the history and progress of the Cactus Ballias from the first mention of the Bolba (Anjou), as explained by Mr. CANNELL, and named with a descriptive notice in our columns, October 4, 1879, up to the present year. The varieties of each year were specified, and mention made not only of the work of Messrs. Keynes & Co., who have themselves raised 10,000 seedlings, but also of the labours of Messrs. CANNELL, Ware, Turner, West, Cheal, and others.

Mr. HUMPHRIES objected to the term Cactus Ballias; but it is too late now to attempt to make a change, and after all, the name is less objectionable than many popular names.

The form of the bud was alluded to as showing differentiating characters between the varieties. No doubt the Cactus Ballias are all varieties of the

Mexican *D. variabilis*, and they form a delightful break away from the rigid exclusiveness of the old-fashioned florists, who saw no beauty outside their own arbitrary and irrational standard of properties.

ROYAL HORTICULTURAL OF ABERDEEN.

At 10.15 P.M., 23. 24.—The exhibition was held in Robert Gordon's College grounds, situated in the centre of the city on the dates named. The entries this year were some 200 in excess of last year.

PLANTS IN POTS.

For the best table, measuring 8 feet by 4 feet, of store or greenhouse plants, Mr. J. PROCTOR, gr. to Sir WILLIAM HENDERSON, Devalia House, Aberdeen, was 1st. His central plant was a fine *Cocos*, with two fine plants of *Onidium myrtilloides* depending at either side, the other plants being fine specimens of *Isora Wilmsiana*, *Eriogonum grandiflorum*, with twenty flowers-pikes, a fine *Pandanus variegatus*, *Aloe vera*, *metalloides*, *Cyanophyllum magnifolium*, and *Psychotria latifolia*, the last two being among the finest specimens of foliage plants in the show. Dwarf orange-trees in fruit, and other plants set in a bed of Alantium, made a pleasing picture. Mr. A. GIBSON, gr. Fairfield, took 2d prize; his collection was certainly shown off to better advantage than Mr. Proctor's, but the plants of which the collection consisted were hardly of the same class. Nevertheless his exhibit attracted much attention, and proved a worthy 2d.

In the competition for the best table of greenhouse plants Mr. A. GIBSON was 1st. His display of *Begonias*, *Pelargoniums*, and *Campanulas* being excellent.

Mr. JOHN SMITH, gr. to Mr. MURRAY, Glenmuir Park, was 1st for stove or greenhouse plants; while Mr. PROCTOR was 2nd with a fine show of *Pelargoniums*.

Mr. WILLIAM KILGOUR, gr. to Mr. WOLSTON, of Edinburg, won in the competition for the best flowering Orchid, with a handsome specimen of *Disa grandiflora*.

In the class for best foliage plant, Mr. PROCTOR was again 1st. Of the others who occupied well deserved 1st honours were Messrs. A. HOWIE, gr. Drumtochilly Castle; JOHN SIMPSON, gr. Varul Bank, Aberdeen; and JAMES ANDERSON, Aberdeen.

Among the working-class exhibitors in this division, Mr. GEORGE PRINCE, Woodside, gained the silver medal presented by the Lichthene Gaitano Company, with a most interesting entry.

CUT FLOWERS.

In the section for *non-gymn.* Messrs. ADAM & CREAGHEAD, Aberdeen, were 1st for Roses; beating Messrs. D. & W. GIBSON, Dundee. The local firm led in named Tea Roses, and the Dundee firm was a creditable 2d. There was a splendid display of Cactus Ballias, and a grand show of herbaceous perennial plants. In the professional gardeners' classes there were fine displays of Carnations and Pansies, and similar terms may be applied to the show of Sweet Peas. In the amateur and working-man classes generally the display was a most creditable one, some of the entries being worthy to compete in any division. In the gardeners' classes, the leading places were taken for Roses, by Mr. G. McLENNAN, Fettesross Castle, Stonehaven, Mr. W. COCHRAN, Ellon; and Mr. J. ANDERSON, Aberdeen. For Ballias, Mr. J. CHAFFER, DUPRIS; Mr. A. GIBSON, Fairfield; and Mr. W. HIRN, Garscube, and for Gladioli, by Mr. J. GIBSON, Maryhill, Ellon; and Mr. G. McLENNAN. For the best collection, twenty varieties, of cut flowers and bedding plants, including annuals best adapted for flower garden decoration, Mr. A. GIBSON was 1st, with a creditable entry.

FRUIT.

The warm, bright summer has had an excellent effect on fruit—so much so that the seasons now practically over, and the display, though a small one, was a good one. Amongst amateur growers were Messrs. A. HOWIE, Drumtochilly Castle; E. KENNEDY, Broadhill; G. TAYLOR, Invergowrie; A. KING, Bainsford; J. GRANT, Rothiemoran; W. COCHRAN, Ellon; A. BREMER, Dalhousie; W. HARPER, Tullochton; A. GIBSON, Fairfield; and JOHN GIBSON, Maryhill, Ellon.

VEGETABLES.

These formed a most creditable and excellent show, Potatoes being an outstanding feature. For the best display among professional gardeners, Mr. G. McLENNAN, Fettesross Castle, was a worthy 1st. Mr. J. GRANT, Rothiemoran, proving a good 2d.

Mr. ALEXANDER PALFREYSON, Rothiemoran, carried off the chief honours for best box of vegetables exhibited by market gardeners.

MISCELLANEOUS.

There were several tents containing special displays by nurserymen and seedsmen, and their contents were greatly admired by the crowds of visitors. Messrs. BRS. REID & Co. had a fine display of flowers and plants. Messrs. JAMES COCKER & SONS, Aberdeen, had also a fine display of flowering foliage plants, and Roses.

MS. THOMSON CAMPBELL, 18, Riecliff Place, Edinburgh; and the 2nd, for one consisting of Sweet Peas, to Mr. DUNCAN FOX, of Duns.

PLANTS.

There were some very good plants shown, notably the two *Columbus* and other foliage plants by Mr. LUNT Ferns and Lillies were also well shown and the various Begonias were good.

VEGETABLES.

These were extensively and well shown in quite a number of classes devoted to single dishes.

See a Collection of Twelve Sorts, Mr. Wainwright, 25, W. H. Dowie, Esq., Dullar, was 1st, showing very fine Cabbages, Cauliflowers, Leeks, Onions, Carrots, Tomatoes, Cucumbers, and Turnips, as the best dishes. Mr. Bagge, to Major SCOTT, K.R., Sunlaw, Kelso, was 2nd, with a fine collection; and Mr. B. Stewart, gr. to the Earl of LAURENDALE, Thirlestane Castle, was 3rd.

MISCELLANEOUS.

From Mr. JOHN FLEMING, Bawleuch, 2nd series, David, came a grand stand in which were presented one 2nd of 600s. of Carnations, several spikes of named varieties of Hollyhock, with stands of Hollyhock blooms; five Pentstemons, East Lothian stocks, Anemones, etc. and a small group of Begonias, and one Mr. ROWAT of ASSURIE, Glasgow, had a grand stand Pentstemons, and Phloxes. Messrs. LINDSAY & SONS, Bonnyrigg, showed a group of herbaceous plants, with good *Violas* and *Dahlias*, and examples of *Perennials* Prof. LITTLE TOMATO, Messrs. CH. THOMAS & SONS, Leith, had a fine display of Pentstemons in variety, the best of which of French Phloxes were very pleasing. Delphiniums with a nice lot of flowers of herbaceous perennials. Messrs. KEIR BROS., Dumfries, contributed a like group, consisting largely of *Baldias*, Sweet Peas, and herbaceous perennials.

Messrs. DUNSON & Co., Waterloo Place, Edinburgh, contributed a table of *Baldias* flowers, including *Baldias* and *Dahlias*, together with decorative plants.

LAING & MATHIE, Kelso, showed *Perennials*, *Violas*, Carnations, and *Cactus* *Dahlias*.

From Mr. E. K. AND WING, came a table of 1st class of Sweet Peas, including Mr. Wainwright's, also one dark blue-colored variety, also some *Violas*, as Eckford's strain of *Veronica*, now one more becoming popular in flower gardening.

Mr. DOWNS, Murrayfield, Pinkhill, set up a very nice group of hardy herbaceous perennial plants, and also a large ornamental group, oblong in form, with rounded ends, consisting of three groups of central one an architectural structure, composed of cork, and finished with Ferns, Aspidistras, foliage plants, and *Violas*, and two end parties with *Violas*, *Delphiniums*, *Columbus*, *Caladiums*, *Begonias*, *Dracenas*, and others of the usual character made use of for decorative purposes. The group covered about 500 sq. ft.

Messrs. R. B. BAIRD & SONS, Pinkhill, had a group equally large, very artistically arranged, and also covering largely the formation of the central one, a graceful *Delphinium* and *Palafox*, with good named *Columbus*, *Lilium*, *Geraniums* in variety, and *Dahlias*, etc., being amongst the material employed. A structure of glass, crossed by a rustic bridge, cut the composition in twain.

Mr. PHILLIPS, Granton, showed a circular group of *Violarums* and *Gemmas*.

Messrs. D. McHAY & SONS, Leith Walk, had a large wall group of plants, the general effect was very *Lilium*, *Geranium* and *L. lanceifolium* were largely employed, besides *Linum*, and a free admixture of large plants were contained in it, and it was enclosed by an edging of *Caladium*, *Argemone*, and *Hieronymus*, *Geranium*.

Messrs. J. & B. RICHANSON, Kippon, Stirling, showed baskets of *Violas*, glossy *Violas*, *Delphinium*, *Geranium*, Cooper's *Black*, *Grass*, *Morac*, *Black*, *Amey*, *Grass*, *Colman*, and a new variety from the same class as *Dugand* *Julior*, and named *Portia* *Vineya*. They also showed *Tomatoes*.

Messrs. CUNNINGHAM, FRASER & Co., George Bank, Edinburgh, set up a circular table of *Violas*, and another furnished with hardy plants, including some good *Violas*, *Caladium*, *Delphinium*, *Lilium*, *Geranium*, *Tomatoes*, *Grass*, *Amey*, *Grass*, *Colman*, *Forbesii*, and *Neptunia* *depressa*.

Mr. CUMBERSON, Bonnyrigg, contributed a table rather prettily arranged, wholly of hardy plants—*Violas*, *Delphinium*, *Geranium*, *Grass*, *Amey*, *Grass*, *Colman*, *Forbesii*, and *Neptunia* *depressa*. He also showed some good heads of *Viola*, *Cultivar*, *Amey*, *Grass*, *Colman*, *Forbesii*, and *Neptunia* *depressa*.

Messrs. GREEN & SON, Diding, Edinburgh, showed a capital lot of Sweet Peas, *Violas*, and other *Baldias* flowers.

Messrs. COCKER & SONS, Aberdeen, in their usual attractive manner presented a group of very ornamental plants of the best strains, and some of them with *Cactus*, *Dahlias*, and a variety of charming hardy *Violas*.

Messrs. CAMPBELL & SONS, Blairdyre, set up some good specimen *Dahlia* *Idiom*, with *Gladioli*, *Koel*, in great variety.

ENTOMOLOGY.

PLANT LICE.

APHIDES—THEIR NATURE—STRUCTURE—HOONEYDEW—METHODS OF PROPAGATION OF APHIDES—MEANS OF DESTRUCTION.

EVERY lover of plants, whether he grows only a few Pelargoniums in his window, or possesses a garden in which to grow his vegetables, whether he grows plants of all kinds for the market, or is a farmer who cultivates very extensive fields for crops, must often have noticed plant lice upon the leaves, stems, or even on the roots of the plants he is growing. Here these small, soft-bodied insects, with long legs and feelers, are seen in crowds, steadily engaged in pumping the sap through their thread-like beaks. Plant-lice are not the friends of the farmer, gardener, or horticulturist, and to obtain some results from their labour, the latter have in some cases continually to fight the intruders. Dr. Otto Enggler, the Entomologist and Botanist of the University of Minnesota, has recently given a comprehensive and thorough account of these insects, enabling us to understand this family of pests very much better than in the past.

There are a great many species of plant-lice, the largest measuring less than one quarter of an inch, while the great majority are very much smaller. Up to very recent times these insects have not received the attention of the entomologist that they deserve, and the life-history of very many species is still shrouded in mystery, and no wonder, for they have a most peculiar life-history, quite different from that of all other insects.

In shape the body is usually more or less pear-shaped. The winged forms have two pairs of delicate transparent wings, these are furnished with a few simple veins, but the venation is more extended than in some other families. The first pair of wings is larger than the other, and the two wings of each side are usually connected by a compound hooklet. The beak is two-jointed, and varies greatly in length; sometimes it is longer than the body. The compound eyes are prominent, and the ocelli are also usually present. The antennae are from three to seven-jointed. On the dorsal aspect of the sixth abdominal segment there is, in many species, a pair of tubes, through which a sweet transparent fluid is excreted. In some genera these organs are merely perforated tubercles, while in still other genera they are wanting. The fluid which is excreted through the abdominal tubercles is the substance known as honey-dew. It is sometimes produced in such quantities that it forms a glistening coating on the leaves of the branches below the plant-lice, and stone walks beneath shade-trees are often densely spotted with it. This honey-dew is fed upon by bees, wasps, and ants. The bees and wasps take the food where they find it, paying little, if any, attention to its source; but the ants recognise in the plant-lice useful auxiliaries, and often care for them as man cares for his herds of cows. In addition to honey-dew, many aphides excrete a white substance; this may be in the form of a powder, scattered over the surface of the body, or it may be in large flocculent or downy masses—every gradation between these forms exists.

The plant-lice are remarkable for their peculiar mode of development. The various species differ greatly in the details of their transformations; but the following generalisations can be made:—

At some period eggs are produced by impregnated females. This ordinarily occurs in the

autumn, in which case the eggs do not hatch till the following spring. From the fact that these eggs are fertilised, they are frequently referred to as true eggs, in contradistinction to pseudova. These true eggs are also known as winter eggs.

From the winter eggs there hatches in the spring a generation of aphides in which there is no distinction of sex. All are females, and each has the power of reproducing without the intervention of a male. Such reproduction is termed agamic reproduction, or reproduction by budding. And this term is also applied to the individuals that reproduce in this way. Usually, the agamic generation produced by the winter eggs is wingless. The agamic female which hatches from a winter egg, being the starting point from which arises the generations that intervene between this egg and the production of other true eggs, is termed the stem-mother.

The offspring of the stem-mothers are wingless, or winged, or both, and are agamic. In many cases they are born alive. This can be seen by examining almost any colony of plant-lice during the summer time. While an agamic mother is unconcernedly feeding or walking about, it may be giving birth to a young louse; the latter can be seen with the unaided eye, but better with a lens, emerging from the caudal end of its mother, tail first, and kicking vigorously, even before its head has been delivered. In other cases, the agamic form produces egg-like bodies, which are termed pseudova, to distinguish them from the fertilised or true eggs; and, in still other cases, they produce living young, which are enveloped in a pellicle, from which they emerge in the course of a few minutes.

The number of agamic generations that may follow without the intervention of sexual forms varies with different species, and, in some cases at least, varies in the same species, depending upon temperature and other conditions. Thus, Kyber, in the early part of this century, succeeded, by keeping the insects in a warm room, in raising a series of agamic generations of two species of aphides, which extended through four years without the intervention of sexual forms.

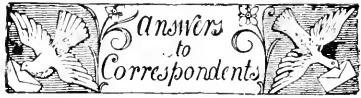
As already indicated, the agamic generations are of two forms, wingless and winged. Each of these has a peculiar function in the economy of the species. The wingless generations, which are usually the more numerous, by their great fecundity, provide for the enormous and rapid multiplication of individuals, which is so characteristic of these insects. But this great increase of individuals would be disastrous to the species, by the destruction of the infested plants, and the consequent starving of the insects, were it not supplemented by other powers. We find, therefore, interspersed among these wingless sedentary generations, generations which are winged and migrating. Thus the spread of the species is provided for.

Generally, on the setting in of cold weather, or in some cases on the failure of nourishment, the weather being still warm, there is produced a generation including individuals of both sexes. The males may be either winged or wingless; but, so far as is known, the females that pair with the males are always wingless. These females, after becoming impregnated, produce the winter eggs; this is completed the cycle of changes through which the species passes. In many cases, at least, the individuals of the agamic generation that immediately precedes the sexual one, produce but few pseudova. From these pseudova the sexual individuals emerge, not as larvae, but as

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending Sept. 7, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return.—

Description.	1900.		1901.		Difference.
	s. d.	q. d.	s. d.	q. d.	
Wheat	28	7	26	5	-2 2
Barley	25	8	25	1	-0 7
Oats	17	10	17	6	-0 4



AN INCH OF RAIN: *Young Gardener*.—An inch of rain is equivalent to $4\frac{1}{2}$ gallons per square yard, or 27.151 gallons, or 101 tons per acre.

BIGNONIA RUST: *W. L. and L. S. R.* The mischief is due to a mite. Syringe the leaves with tobacco-water.

BOOKS: *J. H. N. The Forcing Garden*, by Sannel Wood (Crosby Lockwood & Co., Stationers' Hall Court, Ludgate Hill, E.C.) We are not aware of a new edition having been published since the work appeared in 1881. *Villa Gardening*, by Ibbotay. Published by Macmillan & Co., St. Martin's Street, Leicester Square, is a useful general manual.—*W. P. How to lay out a Garden*, by E. Kemp. Published by Bradbury, Agnew & Co., Ltd., 11, Bouverie Street, London, E.C.; *The Art and Craft of Garden Making*, by T. H. Mawson. Published by B. T. Batsford, 91, High Holborn, London; *Art and Practice of Landscape Gardening*, of the author, H. E. Milner, Dulwich Wood, Norwood, London, S.E.; or of Simpkin, Marshall, Hamilton, Kent & Co., Ltd., Stationers' Hall Court, London.

DIANTHEA NIGRA: *H. B.* Only to be got rid of by high mowing to favour the growth of the grasses. As far as possible, cut off the flower-heads to prevent the dispersion of seed.

PHYRSANTHEM RUST: *H. H. M.* Try a solution of potassium bisulphide— $\frac{1}{2}$ oz. to a gallon of water.

COAST SITES FOR ESTABLISHING A MARKET GARDEN: *W. R. L.* Fogs are less prevalent in Sussex and Kent than along the coasts of Hants, Dorset, and Devon; or what amounts to the same thing, the first two enjoy, as a rule, more sunshine the year through, with perhaps the exception of the district about Torquay.

DOUBLE MESHROOMS: *J. A. G.* The accidental union of two individuals when very young. Specimens are frequently sent to us.

BURN DAMAGED FRONDS COILED: *G. F. Scott Elliot*. Scale insects. You might try petroleum emulsion, used with a moderately hard tooth-brush. You may buy this at the florists, or make it yourself, with one quart of warm water, one ounce of soft-soap, and a table-spoonful of petroleum. It must be kept stirred while being used. Ferns once much infested with scale are seldom quite freed from the insects till the fronds have died down or removed, and then the root-stock and coiled-up new fronds are difficult to deal with. Repeated vaporising with XL All would have the best effects on these, it being impossible to remove them with washes and brush.

FOREST SCHOOL: *T. & Son*. Apply to the Indian Engineering College Forestry Department, Coopers Hill, near Staines. The Forest School at Nancy, France, is excellent, and there are numerous German schools.

GALL ON OAK: The cherry-like gall on the leaf is caused by an insect, *Dryophanthe folii*.

GRAPE: *M. J.* Your Grapes are "spotted" with a fungus—*Gleosporium*. Burn the berries.

LILIUM GIGANTUM: *W. Clark*. Immediately on arrival, if it be open weather, plant them in a warm, sunny, well-drained position, in a moderately enriched loamy soil, containing a considerable proportion of road grit or coarse sand. Put the bulbs into the soil, which should be made firm beneath and around them, with the tops of the bulbs 5 to 6 inches under the general level, and not less than 3 feet apart. Having done this and made the soil level, afford a mulch of spent dung or leaf-mould, and if you have hand-glasses or cloches, put one over each bulb, keeping it on in wet, snowy, and frosty weather, but removing it early in the spring. This is one of those Lilies that is benefited by having planted thinly around it some shrubs or summer-flowering plants, growing to a height of 2 feet or a little more, which will afford shade to the soil and to the stems of the Lilies. If the bulbs arrive during a term of hard frost, plant them in smallish pots, keeping a cold pit free from frost (plunged in tree leaves, litter, or coal-ashes), afford little or no water, and plant in the open in March, or earlier, according to the weather, without breaking up the balls.

MALFORMATION OF ROOTS OF CHELIDONIUM MAHRS VAR.: *B. & S.* The dense growth of adventitious masses of roots is caused by irritation of the roots, set up by ants. *G. M.*

MELONS OUT-OF-DOORS: *F. Dent*. Taking the seasons generally, the summer heat is not great enough in this country to ripen off the fruit, and then there is always the risk of heavy rain causing the fruit to crack, and become worthless. Our varieties of Melons, which grown out-of-doors in Southern Europe, suffer in this manner from rain.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Wills*. 1. *Quercus rubra*, so far as we can tell from the leaf only; 2. gall on Oak, the work of a Cynipis; 3. *Quercus*, not known; 4. *Juniperus virginiana*; 5. *Juniperus virginiana*, var. *Schottii*; 6. *Saponaria officinalis*.—*C. R. P.* 1. *Colicium* (Croton) trilobum; 2. *Colicium* irregulare; 3. *Selaginella rubricaulis*; 4. *Celsia erectica*; 5. *Odontoglossum Coradii*; 6. *Odontoglossum odoratum*.—*H. C.* 1. *Anthericum lineare variegatum*; 2. *Anthericum lineare marginatum*; 3. *Reineckia carnea variegata*; 4. *Bambusa Fortunei variegata*; 5. *Draena ornata*; 6. *Erigeron bellidifolium*.—*W. D. 1.* *Acalypha mucronata*; 2. *Selaginella denticulata*; 3. *Hieracium aurantiacum*; 4. *Tecoma jasminoides*; 5. *Polystichum aculeatum*; 6. *Davallia elegans*.—*Baerum*. 1. *Lysimachia nummularia*; 2. *Oxalis Bowei*; 3. *Erigeron bellidifolium*; 4. *Sedum telephium*; 5. *Spiraea callosa*; 6. *Hibiscus syriacus*, the so-called *Athaea frutex*.—*G. C.* 1. *Eurya latifolia*; 2. *Thuja gigantea aureo-variegata*; 3. *Thuja occidentalis*; 4. *Cupressus Lawsoniana*; 5. *Thuja occidentalis aurea*; 6. *Thuja orientalis* var. *J. K.* 1. *Clematis tubulosa*; 2. *Ceratogon coccinea*; 3. probably *Pinus excelsa*; 4. *Quercus rubra*; 5. *Acer erio-carpum*; 6. *Picea Maritima*.—*J. H.* *Alnus glutinosa* var. *laciniata*.—*W. J. R.* *Clematis tubulosa*.—*J. J.* One of the many forms of *Lilium auratum* near *rubro-vittatum*.

NOTICE TO LEAVE SERVICE: *H. S.* A month's notice under ordinary circumstances in the case of employer and gardener.

OAK-GALLS: *J. C. G.* Oak-spangles, the work of an insect, *Nouroterus lenticularis*.

PLANTS FOR A SMALL GLASS-COVERED YARD HEATED WITH AN OIL STOVE IN HARD WEATHER: *Subscriber*. You could safely grow *Camellias*, hardy hybrid *Rhododendrons*, *Pittosporums*, New Zealand shrubby *Veronicas*, New Zealand Flax, *Myrtles*, *Eugenias*, Himalayan *Rhododendrons*, *Bignonia radicans*, *Loniceras*, common Garden flower, *Fuelias*, *Magnolia fuscata*, *Aralia papyrifera*, and *A. Sieboldii*. Ferns, such as *Adiantum capillus veneris*, *Osmunda regalis*, *Woodwardia radicans*, *Woodsia alpina*, *W. ilvensis*, *Trichomanes radicans*, *Scelopendrium vulgare* in great variety, *Pteris aquilina* common Bracken, very beautiful when grown under glass protection; *Polystichum angulare*, many forms of this; *Polypodium Dryopteris*, *P. phegopteris*, and numerous forms of *P. vulgare*. *Laetrea filix Mas* (male Fern), and its many forms; *Cystopteris* in variety, *Athyriums*, such as the many forms of *A. filix-femina* (the Lady Fern). The above named Ferns are mostly British, and quite hardy, or capable of enduring green-house treatment. *Cyrtium falcatum* (Holly-Fern) should not be omitted.

POTATO MALFORMATION: *Dicksons and W. J.* See reply to H. Turner in our issue for September 7.

RED-SPIDER ON VIOLET PLANTS: *A. T. B.* There is nothing better than to thoroughly wet the plants with a syringe having a rectangular nozzle, holding it close to the ground so as to reach the undersides of the leaves. It should be done night and morning for a week, and then only once a day, morning or evening, accordingly as the weather is wet or dry. Red-spider cannot endure a continued state of moisture, and they will leave the Violets for more congenial quarters. On naturally dry soils, this is the only way in which violets can be kept healthy.

* * * In spite of an extra number of pages in this week's issue, we are compelled, much against our will, to omit many communications and illustrations for which space cannot be found.

COMMUNICATIONS RECEIVED.—*J. G.—C. J. M.—J. C. G.—W. C.—W. J. A.—R. P. Nicc—Towler & Son—H. M.—J. W. M.—Pollack—R. N.—T. G. Rose—E. M.—H. H. Havelock—R. B. M.—A. H.—H. G.—C. R. S.—F. L. Mathew Alban—J. B.—G. W. E. T. R. H. J. E.—A. M. C.—T. Smith—A. Candy—F. W. Alpha—G. M.—H. D. W.—A. Bennett—A. Groom.*

GARDENING APPOINTMENTS.

M. E. PIERCE, for the last three years Gardener at May Place, Newcastle, Staffordshire, as Gardener to Mrs. LAYTON, Melford Hall, Stafford.
M. E. PIERCE, for the last two years Gardener at The Tower, South Gledstone, Surrey, and previously for over twenty years Gardener at Watersfield Towers, Pillingborough, Sussex, as Gardener to Mrs. J. H. LARCHE, Bartlett House, Salisbury.
Mr. A. W. COATES, for the past three and half years Foreman in the gardens at Denton Manor, Grantham, as Gardener to H. SPAFFORD, OBFERS, Esq., Rathmore Park, Walsley, Northamptonshire.
Mr. I. JEFFREY, for the last four years Gardener at Grove Hall, Knottingley, as Manager for J. T. BECKTON, Esq., Fairfax Nursery, Cemetery Road, Brentford Hill, Wiltshire.
WILLIAM DINGWALL, for the last four years Head Gardener at King's Oak, High Beech, Loughton, Essex, as Head Gardener to EDWARD SHACKAY, Esq., Audley, Newmarket, entering on his duties Sept. 24.
Mr. E. BELLS, for ten years Foreman in the Gardens, Caldecote Hall, Nuneaton, Warwickshire, as Head Gardener to E. H. ATHERLEY, Esq., Rodwell Hall, Trowbridge, Wilts.
Mr. HENRY SHARMAN, of Purley Hall Gardens, Pangbourne, and formerly at Broomfield Hall, Sunningdale, as Head Gardener to ALFRED C. HAINSWORTH, Esq., Edinwood, St. Peter's, Kent, entering upon his duties, September 23.
Mr. W. WARD, for the past two years Gardener at Norfolk House, Brandon, as Gardener to H. FRANKS, Esq., Chesild, Hampton Wick, Middlesex. [The postal order sent with announcement of your appointment has been paid to the Gardeners' Royal Orphan Fund.]
Mr. F. CLARKE, for the past thirteen years at Teddesley Park, Penkridge, Stafford, as Head Gardener to Lord BAILEMAN, Shobdon Court, Shobdon, Herefordshire.

CATALOGUES RECEIVED.

ROBERT VEITCH & SONS, 51, High Street, Exeter.
TODD & SONS, Royal Exchange, Southampton.
BULBS AND ROOTS.
THOS. KENNEDY & Co., High Street, Dumfries.
DICKSONS, Royal Seed and Bulb Warehouse, Chester.
H. CANNELL & SONS, Swanley, Kent.
BRUCE & ROBERTS, 46, Castle Street, Forfar, N. B.
W. SMITH & SON, 15, Market Street, Aberdeen, N. B.
ASD. ROOZEN & SON, Overvecht, near Haarlem, Holland.
AGENTS, MERRISS & Co., 3, Cross Lane, St. Mary-at-Hill, London, E.C.
DICKSONS & SONS, Southampton.
JOHN K. KING, Coggeshall and Reading.
J. R. PEARSON & SONS, Chilwell Nurseries, Loddham, Notts.
BARKER & CO., 11, 12, and 13, King Street, Covent Garden, London, W.C.—*Daffodils, Hyacinths, Tulips, Gladioli, &c.*



THE
Gardeners' Chronicle

No. 769.—SATURDAY, SEPT. 21, 1901.

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FRUIT AND VEGETABLE DRYING.

A NEW GLOUCESTERSHIRE INDUSTRY.

MR. JAMES HARPER, a well-known cider merchant, of Ebley, Stroud, Gloucestershire, who, a few years ago, delivered a series of lectures on cider-making, under the auspices of the Gloucestershire County Council, has for the last three or four years been devoting considerable time and attention to the question of the drying of fruit and vegetables, and this year he is making extended experiments with Plums, later on in the season with Apples, and later still with vegetables. Amongst other varieties, he has successfully dried "Black Diamonds," "Victorias," "Green Gages," "King of the Gages," "Orleans," and Damsons. After carefully testing the different dryers, Mr. Harper considers that the "Invicta Ryder Dryer," as sold by Messrs. L. Lumley & Co., the Mimories, London, is the best for the purpose. The machine in question is known as the No. 3 (a) type, and the cost is about £50. This machine dries from 15 cwt. to a ton of Plums per day, and from a ton to 23 cwt. of Apples in the same time. Small machines, capable of drying 45 lb. weight of fruit a day can, however, be purchased of Messrs. Lumley & Co. at as low a figure as

35s., and the work turned out by these small machines is, in Mr. Harper's opinion, quite equal, if not superior, to that of the larger apparatus.

In the course of an interview, Mr. Harper said that in France it was the custom for the small grower to dry his own fruit. Ovens are used there, but his own experience told him that dryers were preferable, because while the oven not only dried the moisture, it dissipated some of the flavour, the dryer dried equally well, but concentrated the flavour. The French grower took his Plums into the market in a dry condition, and the purchasers who were the "finishers," bought from him during the months of October, November, and December. That is the system he would like to see adopted here. At the present time Mr. Harper does the whole of the drying process himself, but owing to the difficulty when buying in a fruit market of getting the fruit in a suitable condition of ripeness and properly assorted, he should much prefer to do the work of the "finisher" only. In America, said Mr. Harper, Plum and Prune-growing for drying is enormously on the increase, and so also is it in France. In these countries, when there is a great glut of fruit, there is universal jubilation amongst the fruit-growers. On the other hand, in England, when there is a great glut of fruit on the trees, there is something approaching universal despair—that is, from the point of view of the grower

as the prices are so low. Having, however, proved the absolute possibilities of the drying process, there is no reason at all why this state of things in England should not be altered. His hope and belief is that growers of perishable products, such as fruit and vegetables, would be able, by adopting the plan he suggests, to profitably increase their production, instead of having, as at the present time, to deplore bad markets and poor prices whenever there is a greatly increased yield of fruit or vegetables.

Coming to the financial aspect of the question, Mr. Harper said that English Plums lost from two-thirds to three-fourths of their original weight in the drying process. Put it at the extreme figure, three-fourths, and that would mean that the initial price of the fruit had to be multiplied by four. The price at which he had recently bought the finest "Victorias" he had ever seen in the Gloucester fruit market averaged under 1s. per pot of 8 lb., which is equivalent to 5s. 6d. per cwt. That would mean that the fruit when dried would cost about 22d. per lb., or 22s. per cwt. Putting the cost of drying at a penny per pound on the dry product, which was excessive, he claimed that the fruit would be worth to the "finisher" at least double. Dried fruit not one bit better than that which he had alluded to, and of foreign growth, was to his knowledge sold at a leading shop in Birmingham at 1s. per lb. All fruit which he had come across grown in England, when dried was equal to, and in many cases superior to, that which was grown abroad.

Dried fruit will keep for any reasonable length of time, and he had tasted Plums that were grown eight years before, and had been dried in England with excellent results. Not long ago he partook of an Appert made of fruit which was staged at the Windsor Show and dried in this country in 1887.

Mr. Harper has not confined his attention to fruit, but has successfully dried Potatoes, Parsnips, Carrots, French Beans, Peas, and Turnips, by the aid of the same apparatus. "When it is considered that the importations of dried vegetables are enormously on the increase, and that His Majesty's Government are buying all the dried vegetables for the troops in South Africa—amounting to many tons per day—entirely from Germany, because there is a lack of sufficient enterprise to do the same thing in England, the vast importance of the subject will be manifest to every thoughtful person." Wherever it is not possible for the system to be carried out by individual effort, Mr. Harper advocates that the work should be done on co-operative principles.

THE FOOD OF SOME BIRDS INHABITING AN ORCHARD.

(Continued from p. 197.)

MARSH TITMOUSE (*Parus palustris*).—Curiously enough, this was the commonest member of the Paridae observed. I only saw the commoner blue and great tit once or twice during a week's close observation. My first acquaintance with *P. palustris* was at the commencement of my observations, when I accidentally came across a little fellow clinging to a ripe old Thistle head, from which I presumed it was taking plant-lice, or some other insect. To my surprise, however, I could find no trace of insects of any kind upon the plant. Subsequently I frequently saw them frequenting the heads of the Marsh Thistle, and with my glasses could distinctly see them extracting the seeds after the same manner as the goldfinch. The only individual examined was found to contain a quantity of the seed, besides fragments of plant-bags, ichneumonids, and beetles. Members of the tit family are almost omnivorous, but I was not aware before that they would eat the seeds of Thistles, although I had recently seen them feeding upon the partly ripened fruit of the sunflower.

NUTHATCH (*Sitta caesia*, Mey.). This species was common, but generally occurred singly, and although the summer was far advanced, the breeding song was often repeated. The bird examined had been feeding upon earwigs, small beetles, and a plant-louse; all, with the exception of the earwig, were in too fragmentary a condition for identification.

GREEN WOODPECKER (*Picus viridis*). This useful species was wisely protected throughout the year. Every few hours one of these birds would pay the orchard a visit, but rarely stayed for more than a few minutes. Almost all kinds of wood-boring beetles and their larvae, or apparently any insect which frequents the bark of trees, are devoured by these birds; but they subsist very largely upon ants, of which they devour great quantities. Referring to some of my earlier *post-mortem* examinations of this species, I find that one individual taken in August contained twenty-three earwigs, and a large quantity of ants. This record will therefore serve as an illustration of what the birds are likely to obtain in an orchard at this period of the year.

GOLDENCH *(Carduelis elegans, Sc.)*. This delightful little songster was also protected in the same area throughout the year. During the Thistle season they seem to subsist

entirely upon the seeds of these plants. One of the most beautiful sights I ever witnessed was about 5 o'clock one morning, when I accidentally came across a small flock of these birds feeding below me on a huge bed of giant Thistles. Occasionally one would utter its familiar twitter; but they were unusually quiet, and when the birds flew from one Thistle head to another, the silent flight, and the brilliant yellow band formed by the primaries, reminded me more of huge hawk-moths than birds. I have never seen the species so abundant elsewhere. They constantly visited the orchard, and were altogether as common as the house-sparrows in the same district.

BULLFINCH (*Pyrrhula europæa*, V.).—This bird is much less common than the goldfinch, and confines itself more to the rough hedges. An immature bird, which was found dead, contained a quantity of the seeds of the common Elder, and also a few of the Blackberry, which conclusion proves they had been feeding upon the fruits of these plants.

BUTTER-BIRD OR SHRIKE (*Lanius collaris*, Lin.).—It gives one pleasure to be able to say that this interesting bird was quite common—two families frequented the orchard and surrounding fields. They were also freely met with in other parts of the district, but they confined themselves chiefly to the tall rough hedgerows, where they could be constantly seen feeding their fully-fledged young. Strange to say, I searched in vain for their "larders," although I have frequently found them in districts in North Wales, where they are comparatively rare. Humble-bees enter very largely into their dietary, and they are also fond of the larger species of beetles.²⁶ The remains of the insects supplied to the young birds may be found at the bottom of their nest.

ROOK (*Corvus frugilegus*, Lin.).—A small party of these birds came very early in the morning, but cleared off so soon as the workmen came about. They were searching chiefly among the comparatively fresh dung for beetles, upon which they very largely subsist at this period of the year. One morning, at 4.55, I saw several of these birds suspiciously engaged among the branches of an early Pear-tree. I got a long shot at one of them, which I found on dissecting had filled himself with the fruit and with one large dung-beetle.²⁷ On examining the tree, I also found some fruit had been broken from the tree, and showed unmistakable evidence that the whole party had been feeding upon them. Subsequently I was informed that in the previous year almost the entire crop had been taken by these birds and carrion crows. As a warning, I tied the unfortunate victim to a branch of the Pear-tree, which, I am glad to say, entirely put a stop to their depredations.

LONG-EARED-OWL (*Asio otus*, Lin.).—A pair of these birds had taken up their abode in a deserted carrion crow's nest, and, judging from its condition, they had either reared a brood there, or frequented it as a resting place. Under the nest I got a number of "pellets," and I also found others under the adjacent Pear-trees. The birds were remarkably shy during the day-time, and invariably flew from tree to tree on near approach. One sunny morning, about 6.30, one of them

flew quite away from the orchard, and across several fields, until out of sight—a rather unusual habit for this species. The "pellets" referred to consist of the undigested portions of the food—bones, fur, feathers, &c., and they give an exact record of what the birds feed upon. The examples I found contained the remains of the following:—mole, common shrew, long-tailed field-mouse, blackbird (one), but quite 25 per cent. consisted of the remains of large dung beetles;²⁸ some pellets being entirely made up of them and grass. I should add that the species of beetle referred to was exceedingly common. I dug as many as fourteen examples from under one heap of dung, and in the evening one could hear them buzzing about all over the place.

I have nothing further to add, and must ask the reader to judge of the merits or demerits of the species dealt with; but I trust that the few records which I have been able to make will give us a better understanding as to the exact nature of the food of birds found inhabiting an orchard in August, and show us what an important, though subtle, part they play in reducing the number of insects which feed upon the products of the orchard or farm. Necessarily the food would vary according to the season, and soft-bodied caterpillars would enter very largely into the dietary of nestling birds. R. V.

NEW OR NOTEWORTHY PLANTS.

We have received from Mr. Henkel, of Darmstadt, specimens of the following plants, many of which are new to our gardens. We append short descriptions of the specimens, but we take the names as Mr. Henkel gives them to us, as, although we have been able to verify the nomenclature in some, we have been unable to do so in other cases.

DELPHINIUM SCOPULORI, Gray.*

A tall-growing species, slightly puberulous, with the usual very deeply cut orbicular leaves, and spikes of moderately sized, intensely blue, glabrous flowers, with a spur double the length of the sepals. The plant has a very ornamental character.

It is a native of the Rocky Mountains from New Mexico to British America.

GERANIUM INCISUM, †

A tall-growing, loosely-branched perennial, from North-west America, with the stems covered with viscid glandular pubescence, as if to prevent access of undesirable insects. Leaf-stalks of cauline leaves, $\frac{3}{4}$ inch (5 mill). Cauline leaves 1½ in. (4 cent.), roundish, deeply 3-5-lobed, central lobe longest, oblong, ending in three short lobules. Peduncles spreading, 2½ in. (6-7 cent.), long, dividing into two pedicels about 1½ in. (4 cent.). Flowers 4 inch (15 mill) across. Sepals herbaceous, oblong obtuse, apiculate, covered with glandular hairs. Petals purple, obovate, entire, thinly beset with long white hairs. Styles and ovary thickly covered with glandular hairs.

CASTILLEJA INTEGRÆ, †

A perennial species from New Mexico, with thin pubescent, loosely branched stems; cauline leaves 3 inches long (7½ cent.), sessile, linear three-nerved, villosulous, especially on the under surface. Flowers in dense terminal spikes, each subtended by a boat-shaped, orange-scarlet, three-nerved bract, 1 inch long (nearly 3 cent.); calyx tubular beneath, dividing above the middle into four lanceolate, one-nerved segments, at first green, but which ultimately become scarlet. Corolla tubular below, tube narrow, curved, limb

* *Geotropes stereocariis* and spinger.

† See Gray, *Plant. Wright*, ii. 9, ex Coulter, *Manual of the Botany of the Rocky Mountain Region*, 1855, p. 11; Brewer & Watson, *Botany of California*, 1850, p. 11.

† *Geranium incisum*, Nuttall, ex Torrey and Gray, *Fl.*, i. 206; Brewer & S. Watson in *Botany of California*, i. 180, p. 91.

† *Castilleja integræ*.—A Gray in Torrey, *Mexicana Botany*.

hooded, two-lobed, upper lobe erect, narrow, compressed, partly green, partly orange, lower lobe abortive, of three small green lobes. Stamens five from the middle of the tube of the corolla; filaments equal, glabrous; anthers linear; ovary ovoid, conic, short glabrous, terminating in a long, thread-like, white style.

The plant is as remarkable in structure as it is attractive in appearance, the orange-scarlet bracts rendering it very conspicuous. It is a nearly of our common Eyebright. All the flowers we examined had five equal stamens, instead of four didynamous ones, as is customary in the genus, but whether this is a constant peculiarity we do not know. Many of these plants are partially parasitic on the roots of other plants, for which reason they are likely to be difficult to cultivate.

PELISTEMON VIRGATUS.

A herb, with straight descending somewhat fleshy roots. Basal leaves tufted, 4 to 5 inches (to 13 cent.) long, narrow, linear acute, tapering to a broad base entire, somewhat conduplicate, greyish-green, covered with very minute whitish scales. Stem, 20 to 22 inches (52 to 56 cent.), erect, terete, green upper leaves, 1½ inch (4 cent.), sessile, linear acute. Flowers loosely arranged in long, loose, erect racemose cymes; lower pedicels as long as the leaves, upper ones longer. Calyx cup-shaped, of five green ovate lanceolate sepals, 5 mill long, with white membranous edges. Corolla ½ inch long (2 cent.), pale lilac, irregularly funnel-shaped, with a two-lobed limb, upper lobe with two, lower with three, rounded lobes. Stamens included glabrous filaments, provided at the apex with a knob-like process, anthers deflexed, purplish; style filiform, white, ovary glabrous.

Presumably this is the *P. virgatus* of A. Gray, in Torrey's *Botany of the Mexican Border*, but we have not verified it.

PELISTEMON SPICATABILIS,*

A tall-growing species, with glaucous, fleshy, ovate-oblong dentate leaves, about 3 ins. (7-8 cent.) long, rounded near the base, and tapering abruptly into a leaf-stalk about 3 cent. long. The uppermost leaves are comate at the base, forming a cup around the stem. Flowers in loose racemose cymes; pedicels slender, 1 cent. long; calyx shorter than the pedicel, of five long, tubular, tube narrow beneath, obliquely distended above, limb two-lobed, upper lobe with two, lower with three, obtuse subdivisions; sterile stamen, with a tuft of hair at the base.

This is one of the handsomest species, and has long been known in our gardens, having been figured in the *Botanical Magazine*, tab. 5286. It is a native of California and Arizona.

ASTER CARINOSUS, Hort. Henkel (not of Gray).

A straggling, loosely branched plant with slender glabrous branches; cauline leaves, 3 inches (7 to 8 cent.), linear entire, sessile, glabrous, upper leaves much smaller; flower-heads about 2 cent. across, with a many-rayed involucre of linear bracts recurved at the tips; rays violet, disc orange.

This is a pretty species, but the name given to it requires confirmation, as the characters do not agree with those of the *Aster carinosus* of Asa Gray, *Synoptical Flora of North America*, 1854, vol. 1, part 2, p. 202.

ASTER MULTIFLORUS, Gray.†

A much-branched species, with ascending, wiry, glabrous branches; cauline leaves, 2½ inches (6 cent.), sessile, linear, rough; upper leaves much smaller; flower-heads solitary at the end of the branches, 1 cent. deep, involucre of many rows of linear oblong apiculate bracts, recurved at the tips, rays flowers whitish.

A species widely distributed throughout the north-east and north-west United States, extending south as far as Texas and Arizona, and varying much in consequence.

ERIGERON NEO-MEXICANUS, †

A perennial (or sparingly biennial) with coarse hairs, remotely branched, with spreading wiry branches. Cauline leaves 2 to 3 inches (5 to 6 cent.) long, nearly glabrous, oblong, pinnately lobed; lobes remote, linear obtuse, terminal lobe largest; upper leaves gradually diminishing in size. Flower-heads loosely panicle, 2 cent. across. Involucre of many rows of linear, acuminate incurved hairy bracts, increasing in size from without inwards. Ray florets linear white recurved; disc florets tubular yellow; pappus faintly pubescent, receptacle flat. The plant is a native of hill-sides in New Mexico and Arizona.

POLYGONUM AMPLEXICAULE ALBUM.

This is sufficiently indicated by its name. The very long tubular "ocreate" stipules are very remarkable, and the long dense spikes of white flowers are not devoid of attractiveness. It is a native of Nipal.

* Asa Gray, in Torrey, *Mexicana Botany*, 112.

† Asa Gray, *Synoptical Flora of North America*, vol. 1, part 2 (1854), p. 180.

† Asa Gray, *Proc. Amer. Acad.*, xix. 2, ex *Synoptical Flora of North America*, vol. 1, part 2 (1854), p. 219.

* *Neoprophorus lunator* and *mortuorum*.

† *Geotropes stereocariis* and spinger.

BRUGES.

We are enabled this week to lay before our readers an illustration (fig. 64) of the recent show at Bruges, for report of which see p. 192 in our issue for Sept. 7. The central square of the delightful old town was on this occasion transformed into a garden of delight. The old Belfry has looked down on many a stirring sight, but never on a more pictorial one. We gave a report of the show in a former issue, and now give a view in the market square in the hope that the example so spiritedly set may be widely followed. Of course, the tender plants were exhibited under cover.

being the name of the white Grape staged. The Peaches consisted of Crimson Galande, the largest tree of which was about ten years old, growing in a pot 18 inches in diameter, 10 feet high, and carrying about five dozen large, highly coloured fruits; the foliage being large for trees of the size indicated, and restricted at the roots to the limits of an 18-inch pot, and perfectly clean. Dagmar, General Lee (an American variety), about 8 feet high, and carrying a good crop of large fruit, fine in size and colour. The same remark applies to the several fine specimens of the Dagmar and Champion Peach, the trees

unmistakable evidence of high cultural skill having been bestowed upon them during the whole period of their growth, from the annual autumnal potting up to the date of the trees being exhibited. This exhibit, notwithstanding the fact that the Messrs. Rivers may have had hundreds of pot trees of the kinds indicated to select from, was the finest of the kind hitherto seen by the writer. The Peach and Nectarine-trees, too, presented a graceful and natural appearance, owing to the fact of the young bearing shoots of the previous year's growths having been only shortened back a little; in the process of pruning the



FIG. 61.—HORTICULTURAL EXHIBITION IN THE MARKET SQUARE, BRUGES.

FRUIT-TREES IN POTS.

ONE of the features observed at the recent Shrewsbury Show was Messrs. Rivers & Son's exhibition of fruit-trees in pots, an exhibit which justly enough commanded a great deal of attention, and excited the admiration alike of the numerous expert fruit-growers present at the show, as well as of the general public appearing thereat in their thousands—some 70,000 to 80,000 people on both days of the show. The exhibit in question consisted of Peaches, Nectarines, Pears, Plums, Cherries, Apples, and Grape-vines, black and white varieties. The Vines were two-year-old canes, trained round and over a flat trellis about 4 feet high from the pot, these being wide and round on the top, and narrowing down to the diameter (12 inches) of the individual pots. Each Vine of which there were several specimens of each kind had about a dozen good even-sized bunches as a crop, "Gradiska"

from 6 to 8 feet in height being in pots ranging from 12 to 15 inches in diameter. They were pyramidal in shape, the top 2 or 2½ feet of growth constituting the pyramidal forms consisting of the current year's make. The Nectarines consisted of Dryden, bearing a good crop of large, well-coloured fruit; and Rivers' Orange, also carrying a good crop of high quality fruit. The white Bigarreau Cherry was well represented. Pears Louise Bonne of Jersey, in 10-inch pots, had twelve large fruits each, which for small trees was a good crop; Dr. Jules Guyot bore a like number of large, long, green fruit of the Pitnaston Duchess type; Conference was also in evidence. Plums Swan, round, red, large fruit of the Sultan form; and Belle de Louvain, fruit very large and good. A small tree of Peasgood's Nonsuch Apple had several fruits of immense size on it, these being fine in form and handsome in appearance.

One and all of the trees in this exhibit bore

superfluous growths having been cut clean away, and in some cases spurred hard back. Thus treated, the trees are not only more graceful in outline, but produce larger and finer all-round fruits, and remain in a more vigorous, healthy, and fruitful condition much longer than trees which have been spurred in like an Apple or Pear at pruning time.

That such trees had copious and frequent applications of liquid-manure at the roots, in addition to frequent and judicious top-dressings with some approved fertiliser, before applying clear water at the roots during the whole period of active growth, but especially during the time they were swelling their fruits, goes without saying. Could the trees but have been endowed with speech, they would doubtless have told the admiring thousands of people, whose mouths their luscious, tempting-looking fruit made water at Shrewsbury, of the generous and skilled attention which had been bestowed upon them almost hourly during

the last six months, between the hours of sunrise and sunset, in the orchard-house at Sawbridgeworth, the birthplace of so many grand varieties of the Peach, Nectarine, Plum, &c.; including, of course, their thorough washings overhead with clean water every morning and afternoon, and the abundance of fresh air which they receive between their "washings." *H. W. Ward, August 26, 1901.*

ORCHID NOTES AND GLEANINGS.

CATASETUM FIMBRIATUM.

SEVERAL good specimens of this singular and rather showy species are in bloom with *J. Forster Alcock, Esq.*, Northchurch, Berkhamsted, who intends to cross it with *C. Bungeoethi*, which is also flowering with him. The flowers of *C. fimbriatum* are pale green, with purple spotting on the sepals, petals, and side lobes of the lip. The base of the fleshy labellum is prolonged into a conical sac, the side lobes extended, wing-like, and fringed, the front of the lip being also furnished with a short fringe. The flowers are delicately fragrant.

Mr. Alcock finds the *Catasetums* thrive very satisfactorily when grown in baskets suspended from the roof of the Orchid-house. They require drying off and resting in a cool, airy house when the growths are matured and the leaves commence to turn yellow.

LELIO-CATTLEYA × ELEGANS VARIETES.

The varieties of *Laelio-Cattleya* × *elegans* of the *Turneri* section have been very fine this season in the collection of *Henry Little, Esq.*, Baronshalt, Twickenham (gr., *Mr. Howard*), where there are a number of fine forms of this showy natural hybrid, which have been in flower for the last two months. At present in bloom are two remarkable forms, giving the extremes of variation, both in form and colour. The one is of the shape of the typical *L.-C. × elegans Turneri*, with narrowish segments, and a decided division of the side and front lobes of the lip. This form is almost entirely of a dark purple colour, the sepals having a greenish cast over the purple tint. The other is in form more like *L.-C. × Schilleriana*, with a more ample labellum, not showing the cleft between the front and side lobes. The sepals and petals are light rose, the front of the lip carmine-crimson.

Two plants of the pretty *L.-C. Sallieri*, and a fine example of *L.-C. × velutino-elegans* are also in flower.

ÆRANTHES GRANDIFLORIS.

What are known as botanical Orchids often find their way into collections avowedly devoted to showy Orchids only; and when, after being well grown, they flower, they often command more attention than the showier and commoner subjects. An instance of this kind appears in the gardens of *Ludwig Mond, Esq.*, The Poplars, Avenue Road, Regent's Park (gr., *Mr. J. O. Clarke*), where several plants of *Æranthès grandifloris*, imported from Madagascar, are suspended above the *Cattleyas*, &c., on the stage of the house. For several months the plants have been giving their singular ivory-white, fragrant flowers, with inflated green spurs, borne on slender, drooping flower-spikes from 1 to 2 ft. in length. The flowers, which are borne in succession one or two at a time on each spike, are about 2 inches across, and wax-like in texture. In some stages they have a greenish tint, and when passing off they are yellowish. The effect of their flowers on stalks almost invisible at a distance is very curious.

LELIO-CATTLEYA AURORA.

A flower of a very finely coloured variety of this hybrid between *Cattleya Loddigesii* and *Laelia Dayana* is sent by *Mr. Stafford, gr.* to *Fred Hardy, Esq.*, Tyntesfield, Ashton-on-Mersey, who ascribes its fine quality to the fact that both its parents were selected for their fine colour. The flower, which is nearly 4 inches across, has sepals and petals of a bright purplish-rose colour. The lip, which has the front lobe elongated and crimped, is whitish at the base, with some raised dark red lines suggestive of *Laelia Dayana*, and a yellow blotch in the centre. The front lobe and edges of the side lobes are dark reddish-purple. It is a showy dwarf hybrid, and superior to the continental form of the same parentage called *L.-C. × Blesensis*.

SILVER-LEAF IN PEACHES.

THIS disease of the foliage in species of *Prunus* has been a puzzle and a mystery for nearly a quarter of a century, and is still almost as mysterious as ever. The leaves retain their normal form, and are neither spotted nor blistered, but are deprived of a large portion of their chlorophyll, assuming a silvery appearance, and the whole tree becomes of a sickly habit, and unproductive. No spots or pustules are detected on the leaves, and no fungus mycelium in the tissues, and yet the disease appears to be communicable.

The only solution which appears to me to be feasible is, that the present disease is closely allied to the "Peach-yellows" of the United States, and possibly a modification of that disease, and should be studied in connection with the literature of that pest. The latest developments seem to indicate that the primary cause is bacteriosis, which demands close and patient investigation. In that case, if proven to be true, the remedy will be almost as far off as ever, since fungicides cannot be effectually applied to such a deep-seated malady. *Edwin F. Smith*, of the U.S. Department of Agriculture, says that "at present Peach-yellows seems nearest allied to that phenomenon in plants known as variegation. It is now recognised that variegation (pachenchure) in many plants is a disease manifesting itself in stunted growth, imperfect assimilation, hastened development, and feeble vitality." In a note it is added that "there is also, as in yellows, an abnormal ratio of the ash constituents, both potash and phosphoric acid being in excess, and lime deficient."

There have been several suggestions, and even assertions, that "Peach-yellows" is caused mainly by bacteriosis, and this feeling seems to have grown stronger in later years, although in 1894 *Mr. Edwin Smith* was of opinion that "it is almost certainly not a bacterial disease." If later writers are correct in assuming that the disease is bacterial, there is almost equal presumption that "silver-leaf" belongs to the same category.

What has been said of "Peach-yellows" is true also of "silver-leaf." "With our present knowledge, the cure of Peach-yellows appears to be impossible." All the preventive measures resolve themselves into extirpation, and can be summed up in two lines: "The only thing which can be done is to cut out and destroy all trees as soon as any of the signs have made their appearance. It is best to burn the diseased trees, roots and all, if possible."

Both in Pennsylvania and Connecticut, laws are in force "to prevent the spread of the

disease in Peach-trees known as the yellows," whereby it is enacted that "it is unlawful for anyone to knowingly or wilfully keep any Peach, Almond, Apricot, or Nectarine-tree infected with the contagious disease known as the yellows," &c.

This, then, is the only remedy which the American Boards of Agriculture have been able to adopt for Peach-yellows, and we fear that it is equally applicable to "silver-leaf." *M. C. C.*

THE ROSARY.

AUTUMNAL ROSES.

THERE are many admirable varieties of the Rose, even among so-called Hybrid Perpetuals, which though they bloom profusely during the summer, seem incapable of achieving anything in the floral direction during the autumnal months. It is possible that many of these flower so luxuriantly in June and July as to exhaust their strength; but this cannot expressively be said of such Hybrid Perpetuals as *Duke of Edinburgh* and *Horace Vernet*, which however impressive by reason of their almost matchless beauty, do not give us more of it even in summer than we could desire to receive. As a general rule, however (with the exception of the Austrian, Persian, and Penzance Briar Roses, and such varieties as *Crimson Rambler*, *Paul's Single White*, *Carmine Pillar*, and the *Ayrshire Rambler*), those which do not bloom well in autumn, flower in summer somewhat late. It is generally about the beginning of August that *Duke of Edinburgh*—at least in my garden—is seen in its full beauty; and *Charles Lefebvre* may be similarly characterised. *A. K. Williams*, on the other hand, which here flowers very early, is a fine autumnal bloomer; its earliest productions are often veritable miscarriages, with hard and hopeless buds; but this grand Rose, so luminous in aspect, is seen in its integrity when autumn with its coolness and clearness has come. At that period, also, Roses are more valued, though they have many formidable rivals in our gardens. Such, for example, as the magnificent *Cactus Dahlias*, and those superbly beautiful *Oriental Lilies*, *Lilium auratum* and *Lilium speciosum*; but even the august presence of these does not affect very materially our interest in the Rose. It is exquisite, nevertheless, to see them in our gardens, growing in perfect harmony side by side.

Of all autumnal Roses, the most fascinating are the Teas and Hybrid Teas. Conspicuous among these are *Anna Ollivier*, *Madame Lambert*, and *Marie Van Houtte*, these three Roses being extremely prolific, and of the highest artistic capability; *Bon Edith Gifford*, which is also very productive of its flesh-coloured flowers; the venerable *Souvenir d'un Ami*, and its lovely derivative, *Souvenir de S. A. Prince*, which has, during this unique season, been exceptionally fine; *Clara Watson*, an extremely vigorous and free-flowering Hybrid Tea, and an incomparably beautiful Rose when adequately grown (but it is not everywhere that this superb variety succeeds); *Viscountess Folkestone*, famous for its productiveness, its charming colour, and delicate fragrance; the tenderly tinted *Grace Darling*, worthy of bearing such a flower-like name; *Marquis of Salisbury*, and *Grass and Teplitz*, a new crimson beauty of brightest hue; *Madame Pernet Ducher* and *Gustave Regis*, chiefly attractive in bud form, or when only half-blown; *Madame Jules Groslois* and *Madame Cadeau Ramey*, recent French Roses of charming colour, raised by *Guillot* and *Pernet Ducher* respectively.

Older and more familiar Hybrid Teas are the incomparable La France, and its near relative, Augustine Guinoisseau, Caroline Testout, more reliable in autumn than either of these: White Lady, Marquis Litta, and the primrose-coloured Kaiserin Augusta Victoria. Exquisite (Wm. Paul & Sons), Bessie Brown and Lady (Lanmorris (Messrs. Alex. Dickson & Sons, Newtownards), are recent introductions of considerable merit, though not likely to supersede such varieties as Clio or Margaret Dickson.

The great majority of the Hybrid Perpetuals make some attempt to bloom during the autumn, but, as I have indicated, their efforts are not always supremely successful. Among those that flower most freely at this season of the year are A.K. Williams, Captain Hayward, Marie Baumann, Cranston's Fragrant Crimson

dug up. In the meantime, I raised some seedlings, and eventually planted them in large pots in a greenhouse, at first filling the pot half full with a compost of mould, road-grit, and leaf-mould, and as they grew, filling up the pot. Under this treatment they were quite manageable and fruitful. The fine sample of the fruit I showed on July 13 at the Drill Hall meeting was from these pot-plants. The soil in the pots soon became a mass of roots, and the restriction of the pot checked their over-luxuriance, and gave the fruit size and fine flavour. On hot days they required water twice a day, and once a week I gave them guano-water, a trowelful of guano to 2 gallons of water, and each dose was diluted again with an equal quantity of water. I think this mode of growing the

ting it, and many varieties would soon be evolved. It is a new fruit in this country, with an unique and very pleasant flavour. Then there may be the prospect of its becoming crossed with the allied *Physalis Francheti*, and the possible variations. *E. Bonaria, M.D., August 18, 1901.*

BOTANIC GARDENS, MONTREAL.

We do not expect to find in Canada botanic gardens to rival those of Peradeniya, Calcutta, or even of Australia. Nevertheless, Montreal, now visited by T.R.H. the Duke and Duchess of Cornwall, is not entirely unprovided with gardens of this character (fig. 65). Botanic gardens nowadays mostly serve two purposes, one scientific and educational, the other decorative and recreative. Those of us who remember the old continental gardens attached to universities for teaching purposes only, will recognise how vastly they have been improved, even for scientific purposes, by an infusion of the decorative element. Neither should be sacrificed, but each should cooperate with the other. In large towns where there is an ample provision of parks and recreation-grounds, the scientific element may naturally be principally confined to the botanic garden proper; but in any case, good cultivation, so often neglected in the old continental gardens, should be insisted on in all cases.

Another point we would respectfully urge upon our colonial friends is to make the gardens representative of the local flora and of local conditions, and not servile imitations of European gardens and European methods. We do not want to see European bedding-plants predominant in Canada, nor Chrysanthemums in Australia. They have their place, no doubt, but should be subordinate to the relatively much more interesting local flora.

Again, we should like to see each small botanic garden interesting itself particularly in some one specialty—Succulents at the Cape, Asters and Solidagos in Canada, Aecias and Eucalypts in Australia, wherever space is no object. To know a plant thoroughly, it must be watched in a cultivated condition. Herbaria are of supreme importance for botanical purposes, but the information they afford requires to be controlled by, and supplemented by, the knowledge to be obtained from the living plant in all stages of its growth. Such knowledge is all important to the cultivator.

HARDY CRINUMS AND THEIR CULTURE.

SEVERAL beautiful Crinumms, one or two of them at least as fine as any in the genus, are sufficiently hardy to admit of cultivation in the open border, provided some protection can be given to them during very severe weather, and certain conditions with regard to soils can be secured. With these, as with many other plants rather too tender to resist our winters unharmed, the mechanical conditions of the soil in which they are to be grown will make all the difference between success and failure. The soil for Crinumms must be rendered light and rich, rather stony than otherwise, and, above all conditions, it must be well drained by mixing a considerable amount of rubble and soil-siftings with the subsoil.

The best position that can be given to them is the base of a south wall—if in front of a heated house so much the better. The border should be sloped so as to drain the plants as dry as is possible during winter, but in spring a ridge of soil and manure mixed must be laid



FIG. 65.—VIEW IN BOTANIC GARDENS, MONTREAL.
(From a photograph supplied by the Director, Professor Penhallow.)

Bedder, Dupuy Jamain, Baroness Rothschild, Clio, Mrs. Sharman Crawford, and Margaret Dickson.

Of climbing Roses, the truest perpetuals are Gloire de Dijon, not yet quite superseded; Bouquet d'Or, deeper in colour, and more perfect in form; Cheshunt Hybrid, Climbing Perle des Jardins, and Belle Lyonnaise. When those Roses cease blooming, we know by instinct that winter is nigh. *David R. Williamson.*

THE CAPE GOOSEBERRY.

I HAVE been trying further experiments with this interesting fruit, with its unique flavour. Last year I had some plants in pots in a greenhouse. At the end of the season I found they were throwing up new shoots from the base of the stems, so I cut down the old stems, and planted the young ones in the ground in a hot-house, to see what they would do. They grew rampantly, and soon reached the glass, and became quite unmanageable. They tended to shade and smother everything, so after collecting what fruit was on them, I had them

Physalis peruviana, for its fine flavoured fruit, is a good one.

I also, as soon as the frosts were over, planted some in the open ground. The seedlings were raised in a hot-house in small pots. Then they were transferred to a greenhouse for some time, and finally planted in the open ground. At first they took some time to start, but as the days became warmer, they grew with great luxuriance. The difficulty in growing the Cape Gooseberry in the open ground, is in checking the over-luxuriance of stems and foliage, which shade the fruit too much, and prevent it from ripening early in sufficient quantity. Perhaps the best way of growing it would be at the foot of a south wall, and training it on the wall fan-fashion, so as to expose the whole plant to the sun.

If one had a spare glasshouse, one might also try it trained under the glass, as Tomatoes are trained. The Cape Gooseberry never fails to set, one fruit in each leaf-axilla, along each of the many stems.

If horticulturists were to take up its cultivation, as they did the Tomato, they would soon find out the best mode of raising and cultiva-

around the plants to form a large basin for holding water. The bulbs need not be buried in planting; if the rooting-surface is buried 3 to 4 inches deep, it will be quite sufficient for all of them. They are very thirsty plants when active, and must be heavily watered in early summer, or they will not make much growth before the autumnal rains begin; and such flower-scapes as they may thenceforward produce are likely to be cut down by frost before they are fully developed. A thick layer of leaves strewn over the bulbs is as good a winter covering as any, and if very severe weather prevails, a few Archangel-mats thrown over the leaves will help the plants through. If procurable from a horticultural sundriesman, a few mats of Rice-straw, which the Japanese use for packing Bamboo-canes for export, are better than Archangel-mats, as they form quite a thatch when properly fixed.

One of the best known and most extensively planted of hardy Crinums is *C. × Powellii*, a hybrid between *longifolium* and *Moorei*. It has rosy-red flowers 8 inches long, and 4 to 5 inches wide. It is a strong growing plant, producing several scapes from each bulb in the course of a season, each scape supporting eight or more flowers. There are two distinct varieties, *album*, a pure white form; and *rubrum*, which has soft rose flowers, much paler than those of the type plant. So far as I can make out by comparison, it is very similar to the var. *intermedia* of continental growers. These plants are not very satisfactory when grown in pots, as they much resent a cramped root-run. *C. Moorei* is a more tender plant than the foregoing. Though it will grow with tolerable certainty in a south aspect, it only thrives under the shelter of a heated wall. It is a very strong grower, producing scapes 5 to 6 feet high, bearing ten to twelve rosy-pink flowers, each 6 inches across when at its best. The var. *album* is equally useful as a hardy kind. The flowers are pure white, but when produced at midsummer, a soft blush of pink suffuses the flower, and which greatly heightens the effect they give. The variegated form of *C. Moorei* is too tender for planting out-of-doors; it is a very ornamental plant for the warm greenhouse. In very bleak and cold districts, and in any case north of the Tweed, it is best to lift the plants with as many uninjured roots as is possible to secure, as soon as frost has cut the leaves down, and to store the bulbs in a cellar or frost-proof outbuilding, packed in sand as one would store Carrots or Beet-roots. Bulbs so treated will rest quietly through the winter in a plump state. It is necessary that the bulbs should be stored in an upright position, or the bulb-necks will curve as soon as growth becomes active. The plants are hardy with but little protection south of the Thames. *C. Moorei* is easily raised from seeds, and I have had several seedlings flower early in the third year.

C. Schimperii, a native of Abyssinia, is another hardy species. The plant resembles *C. longifolium* in the flowers, which are pure white, funnel-shaped, 8 inches long, and 4 inches across, averaging six to the umbel. The leaves are erect, Yucca-like, but slightly glaucous, and distichously arranged. The plant is about as hardy as *C. Moorei*. It flowers in August and September.

C. longifolium, though the hardiest of the lot, is found by some to be rather unsatisfactory under cultivation outside, as, owing to its being almost evergreen and tending to grow at all seasons, it resents being forced to rest during the winter by cold. I think, however, that its acknowledged hardiness has led growers to expose it in winter more than is prudent with a plant that does not naturally go to rest. It

will keep in excellent condition through the most severe winter with the protection of a fairly thick mat, applied only when absolutely necessary. It is one of the first to grow, and the young leaves are very liable to injury from cold, cutting winds. The flowers are funnel-shaped, white, with a faint pinkish tint on the inside, and a broad band of pink on the outside of each segment; the leaves are long, glaucous, and very ornamental. It is a fine plant for association with Bamboos, Yuccas, and the doubtfully hardy *Kniphofias*, such as *Rooperi*, *Natalensis*, and *Northiæ*. It is best known in gardens as *C. capense*, and is sometimes confounded with *C. longifolium*, which differs in having green, not glaucous, leaves, and in having flowers without a pink band on the outside of each segment, and in its much shorter filaments.

Another *Crinum*, *C. latifolium* var. *jenense*, is likely to prove as hardy as *C. Moorei*, or even more so, judging from the amount of exposure I have given it for purposes of test in a pot. It has a distinct advantage in being naturally deciduous in winter, and as the bulbs are globose and without a permanent neck, it would be an easy matter to provide it with a frost-proof covering of leaves. Being a native of Arabia, it requires a dry situation. The plant grows about 2 feet high, and bears spreading white flowers with long curved tubes in magnificent umbels of from fifteen to twenty. It generally flowers in August, and but once in a season. Several large importations of this plant have been made by European nurserymen during the past few years, and it is now becoming very cheap. It is a plant everyone would appreciate, the large umbels being out of all proportion to the small size of the plant.

A *Crinum* which will probably prove new has been distributed under the name of *crassifolium* by several continental nurserymen lately. I have not yet verified its reputed hardiness. It does not agree with *C. crassifolium* of Herbert, which Mr. Baker includes as synonymous with *C. variable* in his excellent monograph of the *Amaryllidaceæ*. It is most like *C. longifolium*, much enlarged in the entire plant, but not in the flowers. It is very free-flowering; my plant, which is growing in the open border, has produced three scapes in one season—but as a garden plant it is a long way behind *C. Moorei*, *C. × Powellii*, and their respective varieties in my estimation of its value. *Geo. B. Mallett*.

NURSERY NOTES.

MR. MATRICE PRICHARD'S, CHRISTCHURCH.

It is about a year ago that we had the pleasure of visiting this nursery of hardy herbaceous plants, and giving our readers a notion of the choice, and in many instances rare, species and varieties observed therein. It was late in the season for many species, and the flush of the flora was past. This year we were more fortunate in regard to time. One of the first plants to take the eye, on the visitor entering the nursery from the street, was a large example of *Polygonum Baldschuanicum*, whose panicles of minute white flowers showed with good effect against a dark background. We had seen small flowerless plants, but were not prepared to see a specimen 10 feet in height, and almost as much in diameter. Close alongside of this was a great mass of the bushy, purple-flowered *Vetch*, *Hedysarum multijugum*, which had been in flower. Mr. Prichard informed us, since early

summer, and would continue but little reduced in floriferousness till late in October. Further on in the nursery we came across a new and handsome *Aconite*, *A. californicum*, with a much more elongated hood than the common species, and of a dark shade of blue colour. This plant was about 5 feet in height. *Heuchera bryzoides* ×, likewise a novelty, is a desirable free-flowering, pink coloured variety, and reaches a height of about 3 feet.

A new *Hypericum* (St. John's Wort) named *galloides*, growing 2 feet high, forming a compact bush covered with golden-yellow blossoms, $\frac{1}{2}$ -inch in diameter, habit erect, and linear leaves, semi-evergreen, is a notable plant that originated with M. Lemoine. Another good plant suitable for the back rows of borders is *Liatris graminifolia* var. *dubia*, apetalous, and growing to a height of 5 feet, probably, though the plant remarked was never that height. Of this *Liatris* there are purple, white, and pink flowered varieties. The flower-spikes measured $1\frac{1}{2}$ to 2 feet in length, and the leaves are linear. A rose-coloured variety of that old garden plant, *Monarda didyma*, was also remarked.

Growing in the Water-Lily tanks was a quantity of the *Limnorchis Humboldtii*, with yellow flowers; and making good progress were *Marlia's Nymphaea × flamma*, *N. Signouretti*, a flower with orange-coloured anthers, petals yellow on the inner surface and rose-coloured on the outside—a lovely variety; *N. lucida*, like an enlarged *N. Signouretti*, excepting that the flower, when it fades, is of a darker tint; *N. Richardsonii*, whose petals incurve—it is considered to be the best of the white Water-Lilies. Another white is *N. pygmaea helvola*, a species from China, with small flowers, and the plant of moderate growth; and the finest yellow—*N. odorata sulphurea*. The collection of Water-Lilies is a very extensive one.

To return to the land plants. *Tritoma* (*Kniphofia*), *Lemon-cream*, a hybrid raised by Herr Pfitzer from *T. citrina*, has a flower of a slightly deeper yellow tint than the seed-parent. Several varieties of the showy large-flowered *Gladiolus Childsii* were noticed, the larger of which were Mrs. Beecher, a beautiful soft shade of scarlet; and Princeton, another of a somewhat similar tint; also a large plant of *Buddleia variabilis*, covered with its long racemes of lilac-coloured flowers.

Fine large plants of the rich golden-flowered *Asclepias tuberosa* were in abundant flower; this is a plant everyone should grow who can afford to give it plenty of space, and good soil; as a mass on the lawn, or in a conspicuous spot in a border of mixed plants, it is admirable. A fine showy *Chrysanthemum* exists in *C. atratum*, a white-flowered species. *Hemerocallis Dr. Regel*, a plant sent over by the late Dr. Regel from St. Petersburg eight years ago, has flowers of a rich orange colour, which open one at a time on a spike daily and then close; the flower measures 1 inch across. *Cimicifuga cordifolia*, producing big masses of white flowers, would make a capital solitary subject on a lawn, as would also *Solidago odorata*, a variety of Golden Rod, having the exact fragrance of a *Diosma*; and *S. flexuosa*, a plant of peculiar elegance of habit, and requiring ample space in which to develop to its full size.

Clethra alnifolia grows 4 feet in height, and possess spikes of white flowers 6 inches in length. *Eryngium serra* has flower-stalks 8 feet high, 6 feet of which are flower-panicle, the flowers are white, leaves sharply serrated, $1\frac{1}{2}$ foot long and 2 inches wide; habit caulescent. An Andean species, and therefore per-

feetly hardy. The pretty *Erica vulgaris aurea* was taking on its winter leaf tint.

Mr. Prichard has more than doubled the size of his nursery this year, by taking in adjoining

span-roofed glass-house, and a number of small pits for the propagation and protection of the more tender species of plants, the area being walled in and divided into borders as regards

In the house and pits quantities of young plants were being raised and tended, and everything was prospering. Outside, we noticed two *Montbretias*, with flowers larger than any we have previously observed, namely, *M. aureola*, having a ground colour of orange, the centre creamy-white, with a crimson zone on the ground colour. *M. Messidor* has a canary-yellow flower, paling to white at the centre; it is 3 inches wide.

This small enclosure is a veritable treasury of novelties, of which we shall hear anon; and here good work in hybridising and crossing is being performed by Mr. Prichard and his intelligent helpmates.

A REMARKABLE ROW OF PEAS.

In a season like the present, when good Peas are so scarce, it is somewhat curious to find such a grand row as represented by the accompanying illustration (see fig. 66) in a humble allotment-garden on the Hunger Hills, Nottingham, and cultivated solely by an industrious amateur named John Cox, a bricklayer by trade.

It will be readily seen there has been wonderful pains taken throughout the growing season to supply every want, and to thin, stop, and tie each haulm separately to a single stake some 9 or 10 feet high, and about 12 to 15 in. apart.

The variety resembles *Xc Plus Ultra* in outward appearance; but the Peas are too pale for that variety. They were sown early in April very thinly in well-prepared soil, and every want carefully supplied during the growing season.

They are profusely podded from the ground upwards without the slightest trace of mildew. Although the row is but some fifteen strides long, it would be an easy matter to fill a wheelbarrow without being much missed at the time I saw them a few weeks ago. Peas are not the only well-cultivated thing in this allotment, for Onions, Cauliflowers, Carrots, Apples, Gooseberries, Roses, Chrysanthemums, and Sweet Peas all figure high on the pointing-sheet when adjudicating the valuable prizes given annually by the Corporation of Nottingham. *J. H. Goodacre, Elvaston.*

GERBERA "SIR MICHAEL."

The magnificent *Gerbera Jamesoni*, sometimes called the *Barborton Daisy*, is now so well known to all lovers of good plants, that a perfect idea of this new and valuable addition to our gardens may be conveyed by the information that it is practically the same, except for its beautiful lemon-yellow colour—a difference of great importance from a garden point of view. There are one or two other slight differences; first, in the total absence of purple tint about the leaf-stalks, and possibly in a greater obtuseness of the leaf-segments. The paler coloration of the leaf is not botanically important, and is, of course, in correlation with the absence of red in the flower; while the obtuseness of the leaf-segments, above referred to, can also be found in *G. Jamesoni*, though with less frequency. The inflorescence is quite identical, except in the yellow colour of the ray-flores; but this is strongly in contrast with the flame-red of *G. Jamesoni*.

The seeds of this novelty were sent to me fifteen months ago by Mr. W. R. Adlam, with the request that the plant, if new, should be named after Sir Michael Foster. A specific distinctness was, I think, in view; but though this fails, and even the position of botanical variety, I have still the pleasure of carrying



FIG. 66.—A REMARKABLE ROW OF CULINARY PEAS.

meadow-land, and great breadths of the more saleable plants occupy the land. We observed a large patch of the showy *Sunflower*, *Helianthus orgyalis*. Still further removed from the original nursery garden, he has erected a

the unoccupied space. Here we found two young gardenesses in charge, with whose work the proprietor is very well satisfied, and the operations carried on in the department are such as exactly suit feminine fingers.

out Mr. Adam's request in the English form of name properly adopted for good variations of similar degree. This, indeed, may be the first of a series of variations which can no doubt be obtained by crossing. I am hoping, too, for good results from hybrids I have made between *G. Jamesoni* and a quite distinct species with w flowers which is more easily grown, but in itself not so fine. The beauty of *Gerbera* "Sir Michael" or *G. Jamesoni* "Sir Michael," may be imagined, when I mention that the first flower-head on a seedling plant, with stalk about a foot high, was $3\frac{1}{2}$ inches in diameter, equal in form to the finest *G. Jamesoni*, and of the purest possible colour. The seeds were gathered near Barberton, in the Transvaal, at an altitude of from 2000 to 3000 feet. *R. Irwin Lynch, Botanic Garden, Cambridge.*

FOREIGN CORRESPONDENCE.

TULIP BRUNNHILDE.

We have catalogued the early Tulip Brunnhilde, which received an Award of Merit this spring, for nearly a quarter of a century, under the name of "Pott-bakker, white and yellow," and by this latter name the Tulip is generally known in Holland. It is the only name which would have any right of priority, but is not pleasing, and has a more or less provisional character, to be explained by the origin of the Tulip, which is indeed a sport of the Pott-bakker class, just as *Grace Darling*, formerly known as "true scarlet Pott-bakker," and *Queen Emma*, formerly "Pott-bakker, white, striped red."

The name *Unique* has never been used in Holland, or in catalogues of Dutch bulbs, unless by one or two firms. We therefore had no objection whatever to adopt Messrs. Barr's name of Brunnhilde, under which it got an Award of Merit, and has been registered in the official reports of the Floral Committee of the Royal Horticultural Society.

We object to changing names of flowers, and have always tried to give special attention to correct and reliable nomenclature; but in the present case the new name has such a decided advantage on the original name (Pott-bakker, white and yellow)—the name *Unique* cannot yet be considered to be recognised—that we had no objection to allow an exception from the rule.

Inventing appropriate names for varieties of garden flowers is no easy task, and the present case again proves how important the matter is, as a thoroughly appropriate name—short, well-chosen, suggestive, and inoffensive—would have no chance of being replaced by another name. *E. H. Keelage & Son, Ilarlem, September 7.*

THE LAKE AT SHERBORNE CASTLE.

Has any reader of the *Gard. Chron.* a true comprehension of what is meant by 100 acres of Water Lilies? Yet this is the area of the lake at Sherborne Castle. To most of us it would convey the idea of a lovely picture of peerless white blossom showing above a sheet of dark green foliage, the display lasting for months. In reality nothing is further from the truth, for the Water Lily foliage is in a state of perpetual decay, and the decayed brown leaves coil up above the water-level, making the surface rough-looking and odious to the sight, and unpleasantly odorous also. Only a few flowers can be made out near the shore, those 30 yards distant being

invisible among the leaves; that is the summer aspect of the lake. In winter this is all changed. The Lily stems and leaves have decayed and sunk to the bottom, and the lake fed by the clear waters of the river Yeo is at that season a lovely sheet of water, perfectly bright and clear, reflecting the magnificent Lebanon Cedars and other fine trees growing on its banks, and its surface only disturbed by the wind, or by flights of wild duck, water-hens, and herons, as they fly across it. At that season a boat may be sailed or rowed over it, which in summer and autumn are impossibilities, so dense is the growth of the Water Lilies.

CONTINENTAL NOVELTIES.

STRAWBERRY JOHANN COUNT HARRACH.

A CROSS between *Marguerite* and *Laxton's Noble*, effected by Herr Landhofer, garden director to Count Harrach, President of the Imperial and Royal Horticultural Society of Vienna, which is likely to remain a valued variety. The plant is of moderate growth, foliage hairy, and said to be quite proof against mildew and red-spider. The fruit is conical, of the middle size, in colour dark red, with flesh of a lively tint, and of a pleasant, sharp flavour. When forced it flowers ten to twelve days earlier than the parent varieties, and requires no artificial fertilisation. A figure of a plant in fruit is given in August-September number of the *Wiener Illustrirte Garten-Zeitung*.

The Week's Work.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PACE, Esq., Prestwold Hall, Loughborough.

Chrysanthemums.—After the 20th of the current month, it is neither safe nor advisable to keep the earliest Japanese varieties out-of-doors, owing to the risk of injury from wind. Heavy rains and dews are also injurious to the flowers of the earlier varieties. Sometimes, owing to the desire to possess new varieties, and a reluctance to throw away older varieties, more plants are grown than the gardener has space to properly accommodate, or than he could do justice to, the consequence being that the plants are crowded together in peaches, vinerys, and other houses. Under such treatment mildew is sure to infest the plants. Wherever placed, it is indispensable that the plants have all the light obtainable. It is essential also to use the heating apparatus in damp weather to dispel damp; this should always be applied by day. At all times a constant current of air should circulate freely among the plants. In bright weather the plants should be very slightly dewed over with the spraying syringe in the morning, all moisture being dried up by the evening. Let the pots be cleansed, and dead foliage removed. A beginning should be made by honing the forwarder Japanese varieties, following on with the incurveds and pompoms, and forwardest of the single-flowered and decorative varieties. Late varieties of the type of *W. H. Lincoln*, *Nivcum*, and *Lord Canning* may remain out-of-doors till a later date, means being taken to protect them from injury by frost. For this purpose, make a framework of strong stakes, light, and with cross-pieces of lath and wire, so as to cover the plants with tarpaulin to the end of the next month. Continue to apply manure-water to all the plants till the colour of the flowers is observed, after which time its use should be discontinued, and rain-water only be afforded.

Richardia orthiopicum.—The recent rain has had a good effect upon these plants out-of-doors, and growth is very promising. Those plants which were divided and planted out

should now be potted up, and if large plants are wanted, three strong plants should be potted together in 10-inch pots. The best results, however, are obtained by potting the strongest crowns into 6 and 7-inch pots, and this affords a ready means, by potting into the last-mentioned pots, of dividing the stock of plants into successional batches. If these plants are vigorous, they will usually afford three blooms each. The drainage should be ample, *Richardias* being plants that require much moisture. A compost consisting of loam two parts, leaf-soil one part, and some rotten manure and a small quantity of bone-meal and sifted mortar rubble, will be suitable for their requirements. Frequent applications of diluted liquid-manure water will be beneficial when the plants show their spathes. Place newly-potted plants in pots or frames, and syringe lightly for some time. The variety *R. Elliottiana* will be sufficiently matured in growth, and water, which has gradually been withheld, may be dispensed with entirely. The plants may now be laid on their sides beneath the greenhouse stage.

FRUITS UNDER GLASS.

By MALCOLM McINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Strawberries in Pots.—Although these plants when standing in the open do not suffer from long-continued rain, yet they may be seriously injured by needless applications of water. Enough water should be afforded as will avert the flagging of the leaves, the soil being allowed to become moderately dry before any is afforded. This applies more particularly to varieties intended for early forcing, which must soon be put into cold frames, but only using the lights in frosty weather or to throw off heavy rains and snow, and ventilating freely at all other times. Plants that remain wet for any length of time should be turned out and the cause ascertained. This is usually defective drainage—due to worms or other causes. Wherever worm-casts are observed on the soil, apply clear lime water and put the drainage in good order. The crowns of the plants are more numerous with some varieties than others—especially is this the case with *Vicomtesse Héricart du Thury*, a number of small ones clustering round the central crown. Remove the small crowns sideways with a bit of wood shaped like a wedge, and thus concentrate the vigour of the plant on a single crown; and then, although there will be fewer trusses of bloom, the crop of fruit will be no less. Keep the surface soil loose, as then the soil cannot leave water between the ball and the sides of the pot. Top-dress the plants with dried horse-droppings or cow-manure rubbed through a $\frac{1}{2}$ -inch meshed sieve; remove the manure as soon as it appears, and afford the plants plenty of space so as to expose the foliage to light and air as fully as possible.

Cucumbers.—Seeds may still be sown for affording plants to fruit in December and later, but the end of August or first week of this month are more suitable times for sowing. The old trustworthy variety *Telegraph*, when obtained true, is still one of the best as a winter fruiter; and seeds may be sown singly in 3-inch pots and plunged in a bed having a brisk bottom-heat, and as soon as the plants are well through the soil, raise the pots to the light; but still keep in a rather strong heat, the aim being to keep them sturdy. Shift them into 6-inch pots as soon as the roots touch the pots' sides, and support them with neat stakes. A close outlook must be kept for insect pests, this being especially necessary when the plants are raised in the stove, a clean start generally ensuring successful fruiting. It is scarcely possible to clean plants of large size of thrips, black aphid, mealy-bug, and red-spider, without greatly damaging them by the process. If there are strong *Cucumber*-plants now ready for planting in pots or on ridges, they should forthwith be planted, nothing being worse for the plants than for them to become pot-bound; besides,

it is of importance that an early-start be made, in order that the plants may be of large size before fruits are allowed to form, it being certain that they will move very slowly afterwards.

Tomatos.—It is the better practice to cast out the plants when the summer crop is taken; yet, if they are fairly clean, and are trained up the roof, it pays well to lay in young growths, which they are constantly pushing out all over the leading stems, and these soon developing bunches of flower, a good set is often secured. By this means a continuous supply of fruit may be obtained throughout the winter and spring months; but the roots must be well attended to as well as the top. If the border is in the least degree deficient in moisture, let the surface be loosened lightly, and afford tepid water, followed by liquid-manure; and top-dress it with turfy loam and old Mushroom-manure, the dressing being repeated when it is seen that the first one is exhausted. The same holds good if the plants are in pots; the latter may be plunged in a bed of soil.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLFE, Bleton, East Budleigh, Devonshire.

Jerusalem Artichokes.—These plants have with us this season grown very tall, and for fear they might be blown over, the stems have been cut back a little. I do not care to shorten them much, so long as the stems remain green, although some gardeners cut them nearly half-way back, thinking thereby to assist the swelling of the tubers; but I have found that doing this has just the contrary effect.

Globe Artichokes.—The ground on which these are growing should be well supplied with water, and hoed frequently, that the young shoots may be strengthened, and stand the winter better than weakly ones.

Leeks.—Continue to add small quantities of soil to Leeks growing in trenches, affording treatment similar to that advised for Celery. Those Leeks which were planted a month or longer ago have not made much headway owing to the drought, and any that are at a standstill should have water applied weekly, stirring the soil the day after.

Cauliflowers.—If Autumn Giant is turning in, apply liquid-manure, well saturating the ground between the plants. Search the plants for caterpillars every day at the base of the curd, or in the leaves folded over it.

Salad.—Sowings of Mustard and Cress should be made under handlights or in cold frames or boxes, and of Radishes in a sheltered spot or in a cold frame placed on a disused hot-bed, but the lights should not be put into use before cold nights occur. Lettuce plants of sowings made about the 15th of last month may now be planted on south borders or at the foot of a south wall, at about 8 inches apart. I have a number of these pricked out in front of a Peach-house as advised with Parsley. A mistake is made in planting Lettuces too deeply, with the result that decay sets in at once, and the plants die. Let the plants be afforded water in dry weather till they have become established, and hunt for slugs and snails. Where Tripoli Onions have come up very thickly, single them out so that they stand just clear of each other. Some gardeners transplant as soon as large enough, but I prefer to wait till February or even March, when, if transplanted, they grow away freely.

Tomatos.—Plants that have been prepared for winter-fruiting, which are now standing out-of-doors, will have several trusses of fruit set, and will soon need the protection of a glasshouse. When taken indoors the plants should be placed where they will obtain full sunlight, with the stems within 1 foot of the roof, training them similarly to Melon plants. A temperature at night of 60 to 65 will be suitably high for the present, affording plenty of air during the day, with a smaller amount at night in mild weather. When colder weather

arrives, the temperature should be lowered 8 to 10°. Gather the fruits from out-of-door Tomato plants as they ripen, remove lateral shoots once a week, and afford weak manure-water twice a week if the weather is dry.

Spinach.—The plants of the last sowing thin out to about 8 inches apart. Spinach severely thinned with-stands the inclemency of the winter better when allowed a reasonable amount of space for development. A fresh sowing be lightly sown between the rows, keeping it clean of the leaves, and hoeing it after the thinning is finished, much benefit will follow. Hoe the spinach-beds regularly till the leaves have spread over the ground, rendering further hoeing inadvisable.

THE HARDY FRUIT GARDEN.

By C. HEARX.

Raspberry Plantations.—Remove by cutting away at the ground level the canes which bore fruit this season, in order to allow more light to reach the young canes whilst sun-heat is of use in ripening the wood. If more young canes have been retained than are required, let the surplus be removed forthwith, leaving only three or four of the strongest on each stool. These canes should be loosely fastened to the stakes or trellis, as the case may be. If growth has not been satisfactory this season, afford the land weak liquid-manure water, which will assist the plants should the weather remain warm and dry.

Strawberry Plantations.—If a mulch of short stable-dung was applied to the new plantations of Strawberries, much of the moisture in the land will have been retained in it; still, a heavy application of water may be necessary in the event of the weather keeping dry. Pinch off the runners made by the young plants forthwith, and if mildew should appear upon the foliage, apply a wash of Gishurst Compound Soap, or ordinary soap-suds and sulphur, at the rate of 2 oz. of soft-soap and 1 oz. of sulphur to 3 gallons of rain-water; first dissolving the soap in a small quantity of hot water, with which mix the sulphur, afterwards adding clear water to the required strength, giving it an occasional stir up while being applied with the syringe. As it is not good practice to take runners for forming new beds from the plants that have borne fruit, provision should be made for furnishing the necessary quantity of runners in 1902, by planting forthwith young plants in some convenient quarter for brushing layers of which each plant may be reckoned upon to produce three or four strong ones. Narrow fruit-tree borders may be utilised for the purpose, as on such the layering can be conveniently carried out. All flower-trusses should be pinched out as soon as they appear. Potato-land may be utilised without further preparation, other than levelling and making it firm, if borders are not available. Set out the plants at 1 foot in lines, drawn at the least 2 feet apart, so as to give plenty of spare for layers. Should this year's forced plants of Vicomtesse H. de Thury and Royal Sovereign have been planted out in the early summer, a partial crop of fruits will be ripening and in need of protection from birds. Later, handlights may be placed over the beds to hasten the ripening.

THE ORCHID HOUSES.

By H. J. CHAMBERLAIN, Gardener to R. T. MANSFORD, Esq., Cambridge Lodge, Foulden Road, Canterbury.

Applying Water.—One of the most important matters in the cultivation of Orchidists, at this season, the proper application of water to the various plants. There can be no doubt that many failures in Orchid cultivation are due to lack of knowledge, and to carelessness in affording water at the root, and more especially at this season. Gardeners are apt to forget the fact that the sun's evaporating power in northern latitudes is waning daily, and to afford water to a plant in the same degree as was done quite recently in warmer weather is quite wrong, the longer hours of darkness, and the moister conditions prevailing

outside, causing great injury to Orchids that are kept very moist at the roots. The spotting of the foliage that often results from this cause is a permanent disfigurement to the plants, even should it not extend further than the leaves. Again, the pseudo-bulbs of Cattleyas, Lælias, and Odontoglossums, may appear one day in perfect condition so far as outward signs go, and the next day the leading growths will be found a mere mass of pulp, and often the total loss of the plant occurs. In view of these mishaps, the application of water needs the fullest consideration on the part of the gardener. Local conditions vary greatly, and no exact rule can be laid down that will suit everyone. I find that it is better to wait until the potting compost is thoroughly dry before affording water, provided the pseudo-bulbs do not shrink in size; and when a plant is in active growth, or the pseudo-bulbs have about reached their full size, they are very apt to be thus affected if the supply of moisture be partially cut off, and in order to avert any mishaps, such plants should be examined daily. If a day can be chosen for applying water it should be a bright one, the water being applied in the early morning hours, and the moisture dried or mopped up before the evening. The damping of the floors, &c., should be carried out at such times as will reduce the actual condensation of moisture on the foliage of the plants during the colder hours between light and darkness.

Thunias, of which the growth is thoroughly ripened and the foliage has dropped, may be placed in a cool but fairly dry place, and afforded a long rest; and only in this way will satisfactory strong breaks be obtained in the spring.

Deciduous Dendrobiums.—Any of the plants the growth of which has reached maturity, should be gradually inured to a condition of rest, and those plants whose growth is backward, should be placed at the warmer part of the stove and in a sunny position, so as to get the growth matured before the winter sets in.

Evergreen Dendrobiums should have the full-benefit of the strong sunlight and free ventilation when ever the outside conditions permit, no shading being applied.

THE FLOWER GARDEN.

By T. H. SIMS, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Golden-leaved Privet.—This useful shrub is so very effective that I am surprised at seeing it so seldom planted; it is of evergreen character [not always, Ed.], and few small shrubs afford a yellow colour in the winter. It may well be planted in pleasure grounds that are overdone with evergreens of a sombre hue, and with some annual pruning with the knife it needs little attention. The colour of the foliage is deepest two years after planting, and if the position is a sunny one the golden hue will be more pronounced than in a shady place. Some plants should always be grown in the home nursery; and as it roots readily from cuttings easily obtainable at this season, there need be no difficulty about getting up a stock of the plant. The cuttings should be made to 15 inches in length, and with or without a heel, and inserted in the soil 3 inches in depth and 12 inches apart in rows 18 inches apart. The cuttings should rest on firm ground and be trodden firmly in the rows.

Vinea variegata major.—This is a most useful spreading plant, and very suitable for planting where the Privet might not succeed. The plant is easily increased, the rambling shoots quickly forming roots at the joints which soon strike into the soil. The best plants are obtained by propagating the strong shoots that spring from the centre of established plants, which may be treated in the same manner as the Privet. The variety named is the best form for general planting, the variety *Vinea v. elegantissima* being smaller in the leaf and not so strong in growth.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 24. — Royal Horticultural Society's Committees at the Drill Hall, Buckingham Gate, Westminster.

SALES.

MONDAY, SEPT. 23. — Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, SEPT. 24. — Dutch Bulbs, at Protheroe & Morris' Rooms. — Beneficial Interest in Lease, and whole of Stock of Palms, &c., by order of Trustees, at 256, Peckham Rye, by Protheroe & Morris, at 12.30.

WEDNESDAY, SEPT. 25. — Dutch Bulbs, at Protheroe & Morris' Rooms. — Farming Stock, Store and Greenhouse Plants, at Caen Wood Towers, Higgate, by order, by Protheroe & Morris, at 12.30.

THURSDAY, SEPT. 26. — Dutch Bulbs, at Protheroe & Morris' Rooms. — Clearance Sale of Nursery Stock, Greenhouses, &c., at the Rose Nurseries, Stanley Road, Boxeth, Harrow, by Protheroe & Morris, at 12.30.

FRIDAY, SEPT. 27. — Orchids and Dutch Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick — 55.9

ACTUAL TEMPERATURES.—

LONDON.—September 18 (6 P.M.): Max. 67°; Min. 53°. September 19 — Dull, mild, some rain.

PROVINCES.—September 18 (6 P.M.): Max. 90°, Scilly; Min. 49°, Shetland.

A FULL translation of GREGOR MENDEL'S paper, which is given in the latest issue of the *Journal of the Royal Horticultural Society* (vol. xxvi., parts 1 to 3, pp. 1 to 32), with an introduction and foot-notes by Mr. W. BATESON, M.A., F.R.S., should be of great interest both to botanists and horticulturalists. It was published in 1865, and embodies the results of eight years' systematic hybridisation and observation, concentrated upon about thirty-four distinct varieties of Peas (*Pisum sativum*, quadratum, saccharatum, and umbellatum), and the formulation of a law, now generally known as the Mendelian law, which he deduced from said results, and which, so far as this special genus of plants is concerned, he certainly fully established. It is true that in a subsequent paper on Hieracium he observed and recorded unconfirmable cases; but where a law is found to emerge so unmistakably from such an immense mass of data, covering many thousands of plants, and numerous generations, its validity is in no wise overthrown by the discovery of exceptions which may quite well arise through the interaction of other laws which have yet to be discovered. The law of variation, independent of crossing, is as yet a sealed book, and until this is discovered or determined with some clearness, the hybridist is liable to find his most systematic trials vitiated by its interposition. In any case, as Mr. BATESON well observes, "However much it may be found possible to limit or to extend the principle discovered by Mendel, there can be no doubt that we have in his work not only a model for future experiments of the same kind, but also a solid foundation from which the problem of heredity may be attacked in the future."

That a paper of such importance should have seen the light in 1865, and should have remained practically a dead letter until quite recently, when the work of DE VRIES, CORRENS, and TSCHERMAK in the same direction drew attention to its value, is certainly remarkable. Like other important discoveries, it appeared before the world was

ripe for it, and that it was not followed up sooner by further trials on like lines, may, we think, be accounted for by the great rarity of men who, however well qualified for, or inclined to, such a task, have the leisure and opportunity for concentrated culture and observation on a similar scale. As MENDEL points out in his introduction, no one, until he undertook the task, had carried out experiments on adequate lines since the study of a comparatively small number of plants is likely to lead to false conclusions, and it is only when immense numbers are concerned, and all of them studied, that the underlying principle reveals itself. It was also no simple matter to select a genus, or a series of species or varieties which at once presented a number of definite characters, and at the same time could be systematically crossed without risk of accidental fertilisation, which would utterly vitiate the results eventually aimed at. As he says:—

"The trial plants must necessarily—

"1. Possess constant differentiating characters;

"2. The hybrids of each plant must, during the flowering period, be protected from the influence of all foreign pollen, or be easily capable of such protection."

Both these qualifications he found to be possessed in the highest degree by the genus *Pisum* (Pea), for the reason that the fertilising organs are closely packed within a protecting keel or cover, while the anther bursts within the bud, covering the stigma with pollen even before the flower opens. This enables the operator to remove the keel and stamens at an early stage, while the latter are still immature, and then to introduce the foreign pollen with a fair certainty of its sole action. Hybrid Peas, also, are fully fertile, another essential factor for subsequent culture and study of their offspring; they possess a number of distinctive characters which can be easily noted; and, finally, are of the easiest possible culture. Thus observation could be directed to:—

1. The difference in form of the ripe seeds, round or wrinkled.
2. The difference in the colour of the seed-coats, which is easily observed, as their coats are transparent.
3. The difference in the colour of the seed-coat.
4. The difference in form of the ripe pod.
5. The difference in colour of the unripe pod.
6. The difference in the position of the flowers.
7. The difference in the length of the stem.

In all these we have obvious and clearly discernible characters, especially as the differences are well marked.

As a start, each two of the differentiating characters were crossed together. The crosses were also made reciprocally, i.e., the pollen plants in one set of trials were made the seed-bearers in a second set; and it may be here remarked that one of the outcomes of MENDEL'S investigations was that this made absolutely no difference in the subsequent results—it was quite immaterial which parents bore the seed. The first set of trials involved 287 fertilisations on seventy plants, embracing seven crosses, and in each of these the hybrid character of the offspring resembled one of the parental forms so

closely that the other parental type was practically imperceptible. This, however, is no evidence at all that crossing has not been effected, as superficially would appear to be the case, it simply means that what MENDEL terms "dominant characters" assert themselves in this generation, while "recessive" or latent characters are externally suppressed, only to reappear later in subsequent progeny. These dominant characters in *Pisum* are found to be—

1. Round or rounded seeds without shallow depressions;
 2. Yellow-coloured seed contents;
 3. Grey, brown, and leather colour of the seed-coat, correlated with violet-red flowers and red-spotted leaf-axils;
 4. Inflated form of pod;
 5. Green unripe pods, stems, leaf-veins, and calyx;
 6. Distribution of flowers along the stem;
 7. Greater length of stem;
- while the other characters are recessive or less assertive.

That these latter latent characters are existent in the plant system is clearly shown by the progeny of these hybrids presenting them fully developed, and it is in the proportions of this reappearance that the Mendelian law begins to be demonstrated, the dominant characters appearing constantly in the proportion of three to one as compared with the recessive, *without any transitional forms appearing*. It is impossible in the limited space here available to give details of the results, but summarising them it may be stated that out of 4,612 plants, the dominant appeared in 3,453 cases, and the recessive ones in 1,159 = 248 to 1.

In the next or second generation precisely the same ratio of three to one resulted, whence, quoting MENDEL, "It is now clear that the hybrids form seeds having one or other of the two differentiating characters, and of these one-half develop again the hybrid form, while the other half yield plants which remain constant, and receive the dominant and recessive characters in equal numbers."

In the subsequent trials extending over a period of eight years in all, this same ratio came out from the analysis of an immense mass of data for which we must refer to the paper itself, and from the facts observed MENDEL deduces the principle that in hybrids the ovules and pollen-grains do not contain a heterogenous admixture of potencies, but throughout retain their individuality, and combine with each other on well defined lines, the eventual combinations of characters being strictly confined to the number of combinations which may be possible between the original ones, these really retaining their integrity through all transmissions. The further deductions which MENDEL emphasises are the following:

"That the offspring of the hybrids in which several essentially distinct characters are combined, represent the components of a series of combinations in which the developmental series for each two different characters are associated.

"The relation of each two different characters in hybrid connection is independent of the other differences in the two original parental stocks.

"The constant characters which appear in various forms of a plant group may be obtained in all the associations which are possible according to the laws of combina-

tion by means of repeated artificial fertilisation."

The principles thus defined and established by MENDEL, at any rate, as regards the species with which he dealt, throw considerable light on the phenomena of reversion, the possibility of which, as his experiments show, can hardly be entirely eliminated from the systems of the plants concerned, though the chances of reappearance may be many thousands to one.

The paper also constitutes a guide and a model (as Mr. BATESON points out) for further experiments; but it is probable that the complexity introduced by accidental fertilisation from alien sources, and that inherent tendency to vary possessed by most plants, would in course of time render the law altogether untraceable in distant generations, uncontrolled and uncontrollable with the assiduous care which Abbé MENDEL could devote to his cultures in the seclusion of his convent garden.

None the less, the thanks of the world are due to him for his labours, and the masterly way in which he has proved the existence of a defined law where hitherto all seemed chaos. [Students should peruse this paper in conjunction with the dissertations of THOMAS ANDREW KNIGHT, and the much more recent observations of THOMAS LAXTON, both of which are included in the publications of the Horticultural Society.]

ORCHID-FLOWERING CANNAS (see Supplementary Illustration).—Italy and Austria were among the first of this distinct section of Cannas, and these created quite a sensation for a time; but though the flowers were of great size, they were found wanting in substance, and did not make such good heads of bloom as the Crozy section. However, I have had a number of new varieties added since, and I may yet get further improvement. Miss Kate Gray is one of the latest and best; it is of American origin, and shows a great advance on anything I have observed, the growth being short and sturdy, and the flower-stems are comparatively short, with good heads of bloom. I have not yet tried it planted out, but as a pot-plant it is decidedly one of the best Cannas that we have. Plants received from America last autumn were started, or rather kept growing, for they had made a good start on the voyage. They have since thrown a number of offshoots (or suckers), some of which have flowered, in addition to all the first growths which had started when received. H. J. J. [A plant of this variety, of which our Supplementary Illustration in this issue affords a good idea of the form and size of the flowers and spike, was shown by Mr. H. J. JONES, of Hither Green, Lewisham, at the Royal Horticultural Society's meeting at the Drill Hall, Buckingham Gate, on July 2 of the present year, and received an Award of Merit. The plant grows from 3 to 4 feet in height, and the flowers are of a brilliant scarlet colour, with yellow markings in the throat. ED.]

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees of the Royal Horticultural Society will be held on Tuesday, September 24, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. A lecture on "Roses for Autumn Blooms" will be given by Mr. ARTHUR W. M. PAUL, F.R.H.S., at three o'clock.

—THE FRUIT SHOW.—The Royal Horticultural Society's great show of British-

grown fruit will take place at the Crystal Palace on Thursday, October 10, and the two following days. Copies of the prize schedule, with entry form, can be obtained on application to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster. Intending exhibitors must give notice in writing not later than Thursday, October 3, of the class, or classes, in which they propose to exhibit, and the amount of space required. On each day of the show, after 10 A.M., Fellows of the Society—on showing their tickets at the turnstile—will be admitted to the Palace free.

ROYAL HORTICULTURAL SOCIETY'S CONFERENCE ON ROSES, 1902.—By permission of the Earl of ILCHESTER, a member of the Council, it has been decided to hold a Conference on and show of Roses in the grounds of Holland House, Kensington, probably in the last week of June. The programme and schedule will be published as soon as possible; but probably the only feature which will require special preparation will be a class for twenty-four climbing Roses, in twelve varieties, shown in pots, so as to illustrate their habit, growth, and vigour. Can anything more delightful for Londoners be thought of than a Rose show in the beautiful grounds attached to this historic mansion? We believe the precise date cannot be fixed till it is known exactly when the Coronation is to take place.

YORKSHIRE NATURALISTS' UNION.—The one hundred and sixty-second meeting will be held at Doncaster, for the investigation of the Don valley from Conisborough to Doncaster, on Thursday, September 26, 1901. Permission has been kindly granted by Miss BEWICK-COPELY, Mr. CHARLES E. ELLIS, and Mr. W. H. BATTLE-WRIGHTSON for their estates to be visited, also by Messrs. WALKER & CRAWSHAW, and Messrs. BLADGON & CRAWSHAW for their quarries at Conisborough and Warmsworth. Scabba Wood is expressly exempted from the permission granted, and is not to be entered. The district embraces that part of the Don valley where the river cuts its way through the Permian Rocks. The natural outline of the left bank has been much changed by quarrying; the right side is less altered. As the river winds from side to side of the valley, steep rocky woods alternate with rich alluvial meadows, forming a bit of country alike attractive to the naturalist and the photographer. All parties will leave Conisborough Station after the arrivals of the trains leaving Sheffield at 10.43 A.M., and Doncaster 11.15 A.M.

—A meeting will be held at Cadeby (near Doncaster), for a fungus foray in the neighbourhood of Melton, Sprotborough, and Warmsworth, from Saturday to Thursday, Sept. 21 to 26, 1901. The business arrangements for this meeting have been made by the Hon. Secretaries of the Union, assisted by Mr. H. H. CORBETT and Mr. M. H. STILES, of Doncaster. All communications with regard to the scientific business of the Mycological Committee to be addressed to Mr. CROSSLAND, its Secretary.

FERNS AT THE ROYAL CALEDONIAN SHOW.—The following were the dimensions of some of the Ferns exhibited on this occasion by P. NEILL FRASER, Esq.:—*Goniophlebium subauriculatum*, fronds, 10 to 15 feet long, 5½ feet across; *Gymnogramma Luteoheana gigantea*, 5 feet 6 inches across; *Davallia polyantha*, 8 feet across; *Phlebodium sporodocarpum*, 8 feet across; *Adiantum digitatum*, 5 feet 9 inches across; *A. Williamsii*, 5 feet 3 inches across; *A. cuneatum*, 4 feet across; *A. c. grandiceps*, 4 feet across.

TWO-COLOURED TOMATO.—We have often seen white and black Grapes on one cane, white and red Currants on one stalk, or others partly red and partly white, but we had never seen a yellow Tomato growing on the same stem as a red one till Messrs. BARR & SONS sent us a specimen from their nurseries at Long Ditton. A plant is like a kaleidoscope; shake it a little, and the component parts rearrange themselves in a different manner.

NATIONAL CHRYSANTHEMUM SOCIETY.—The first meeting of the Floral Committee of the above Society will be held at the Royal Aquarium on Monday next, September 23, at three o'clock. The committee will also meet on the following dates: October 21, October 28, November 11, and November 18, at 3 P.M.; and on October 8, and December 3, at 1 P.M. These meetings will be held at the Royal Aquarium.

THE FRENCH HORTICULTURAL SOCIETY.—The French National Horticultural Society has not yet decided where the autumn exhibition will be held. It was announced, apparently with certainty, that it would take place in the Grand Palais des Champs Elysées, but it has since been found out that this building is engaged for other purposes. M. VIGIER, formerly Minister of Agriculture, and President of the Society, has made personal application to the Minister, and it seems likely that the Chrysanthemum show will, after all, be held in the Palais, but at an earlier date, opening on November 6 or 8, instead of on the 13th, as was previously proposed.

LACHNANTHES TINCTORIA.—This plant is, during the silly season, exciting much attention, even in the *Times*, as an alleged remedy for phthisis. Whatever temporary relief it may afford in the case of certain symptoms, no one but those who pin their faith in the advertisements of quack medicines would believe that it or any other drug could exercise any abiding influence in the "cure" of such a disease as phthisis in its advanced stages; but that is a matter we cannot discuss here. We are only concerned with the botany of the plant. The *Index Kewensis* retains the name of *Lachnanthes*, which dates from 1816, but points out that it had been previously named *Gyrotheca tinctoria* by SALISBURY. SALISBURY'S paper is contained in the *Transactions of the Royal Horticultural Society* in 1812, p. 327; but the name was ignored probably for the very sufficient reason that no description was given, but only the bare name (*nomen nudum*), which gives no right of priority apart from a description or figure. But this is not all. Messrs. BRITTON & BROWN in their valuable *Illustrated Flora of the Northern United States*, have discovered that WALTER in his *Flora of Carolina*, published in 1788, described the plant as *Anonymo (sic) capitata*. In accordance with the very curious but very unsatisfactory plan of adopting a mutilated name, and attributing it (in brackets) to some one who could have known nothing about the name, Messrs. BRITTON & BROWN now call the plant *Gyrotheca capitata* (Walter), Morong, in spite of the fact that WALTER had called it something else, thus violating one of the cardinal principles of nomenclature which forbids us from attributing to any particular author something that he never said or wrote, the putting his name in brackets does not obviate the misstatement. A further complication arises from the circumstance that "*Anonymos*" *capitata* of WALTER is referred in the *Index Kewensis* to *Burmanna capitata*. This illustration shows the inconvenience and inaccuracy that arise when an attempt is made to act upon the strict rule of priority without giving due

weight to all the circumstances of the case. The safest rule for gardeners to follow is to adopt the nomenclature of the *Index Kewensis*, of the *Genera Plantarum*, and of *Nicholson's Dictionary*, until some competent monographer arises on whose critical judgment reliance can be placed. Some will say this is a case where the popular name "Red-root" should be used, and we should concur in this view were it not for the fact that Red-root is an epithet applied to various species of *Ceanothus* and to other plants. The unfortunate plant is a herb 1 to 3 feet high, with reddish roots, tufted, linear-lanceolate leaves more or less pubescent; the flowers are yellow, hairy within, and arranged in a terminal panicle cyme, having superficially much the appearance of a *Cyperus*. It belongs to the order *Hamadoraceae*. It was introduced to British gardens in 1812, according to NICHOLSON.

MESSRS. THOMAS GREEN & SON, LTD.—The old-established firm of Messrs. THOMAS GREEN & SON, Ltd., Leeds and London, have been appointed horticultural-machine makers to His Majesty the KING. Messrs. GREEN were for many years royal tradesmen under the late Queen, and their lawn-mowers were in constant use in the Royal parks and gardens at Windsor, Frogmore, Sandringham, Buckingham Palace, Hampton Court, &c., it seems only fitting they should be the first manufacturers of lawn-mowers to receive the honour of a similar appointment under the KING. Messrs. GREEN also announce that owing to the increase of their business, they have enlarged their London establishment, and to that end have acquired a plot of land in Southwark Street, upon which they have already commenced the erection of new premises, and of which they hope to be in occupation by January, 1902.

A PROLIFIC JARGONELLE PEAR-TREE.—The Rev. WALTER WADDELL, Borthwick Manse, Gorebridge, has just taken 1100 Pears from a tree growing on the manse wall, many weighing two to the pound, while the average would be three to the pound. The tree was planted forty-eight years ago, and Mr. WADDELL has carefully pruned and trained it for forty-one years. It is on a west aspect, and has always been prolific, but this is a record crop.—*The Scotsman*, Sept. 11.

"THE SCOTS GARDINER."—A book referred to by Lord ROSEBURY, in his amusing speech at the opening of the show of the Royal Caledonian Horticultural Society, was made the subject of an article in our columns by Mr. BROTHERSTON some time since.

LORD ROSEBURY, in opening the great flower show in Edinburgh, remarked on the technical terms used in horticulture. Horticulture is not alone in this matter; but, like all specialities, it has its own language. This survives when the more popular nomenclature speedily becomes obsolete or inapplicable, and to that extent justifies its existence. We have only to read a few more sentences of his Lordship's speech to find a long list of "popular" names, many of which are as uncouth and unfamiliar as the "false and barbarous" names of which the speaker complained. The survival of the fittest is here regulated by convenience. The majority of those most concerned find, in practice, that the "false and barbarous" names are the most convenient and trouble-saving. It is in our experience those who do not want to know who make the greatest outcry. Those who do wish to know do not find any special difficulty about the terminology, barbarous as it may be. Many of us like music, but not sufficiently to

induce us to become familiar with the terminology of the real musicians; at the same time, we do not complain of the students of music because they use a special jargon of their own.

BOOKS FOR RECREATION.—Lord ROSEBURY brackets two classes of books as equally suitable for the purpose—those relating to gardens, and those concerning continental travel, as dealt with in the continental *Broadshaw*. We are afraid for the honour of garden literature that only a few of the host of gardening books now issued from the Press have any real interest or value for gardeners, but with the continental *Broadshaw* we entirely sympathise with his Lordship.

FLOWER PHOTOGRAPHY.—The September number of the *Photogram* (Edlingham House, Arundel Street, Strand) contains an illustrated article by Mrs. CALBE KEENE on Fruit and Flower Photography. The pictures of flowers are very artistic, but it is disillusioning to hear they are taken from cut blossoms arranged to seem as if growing. Mrs. KEENE finds that plant portraits taken out of doors are likely to be spoilt by the slightest puff of wind. So her pretty pictures are of her own arrangements, not of natural groups. There are no illustrations of fruit accompanying the article; which is popular and pleasing rather than of scientific value. The *Photogram* is, by the way, an excellent journal, interesting even to those who have no camera.

CIDER.—An instructive article on the manufacture of cider in Normandy is given in a recent number of the *Journal of the Society of Arts*, p. 718. It may be commended to those who desire to encourage the production of this beverage in our own country.

SMALL FRUIT.—Out of a total in 1901 of 56,785,133 acres of land in Great Britain, 32,117,415 are under cultivation (not including mountain or heath land). Of this amount small fruit occupy 74,999 acres, an increase 17 per cent. on the previous year (1900).

OVER-SEA FRUIT CROP.—Through the Board of Trade, we learn that the Canadian Apple crop is estimated to yield 13,834,224 bushels, or a little more than 2 bushels to each tree of bearing age. This is less than 40 per cent. of last year's yield. A "States" authority reckons that Ontario will give 31 per cent., Nova Scotia 75 per cent. of a normal crop. The New England crop of Apples is placed at 25 per cent. of the ordinary crop, other parts of the United States 45 per cent. It will be interesting to note the advance in prices during the season of consumption.

SHOW OF GARDEN PRODUCE AT HEREFORD.—For the past seven years, Mr. J. WILSON, seedsman and florist of the town of Hereford, has held a show of the products of the garden, exhibitors coming from far and near. This year the show was held in the Hereford Market on the 4th inst., a large tent accommodating the various things shown. There were open and cottager's classes, and according to our advice the exhibits were very meritorious. Flowers formed a section of the display, such as Asters, Gladioli, Dahlias, Begonias, &c.

GIFT TO SEFTON PARK, LIVERPOOL.—A handsome aviary, the gift of one of the most popular City Councillors, Mr. J. R. GRANT, was opened to the public on Tuesday last, by Alderman JOSEPH BALL, chairman of the Parks and Gardens Committee, who in his remarks spoke of the educational points such a gift would create. Alderman HOULING eulogised the above remarks, stating from experience

the value of Councillor GRANT's previous presentation of an aviary to Stanley Park. The donor, in reply, said how pleased he was to find his work so much appreciated by the people. The building is erected on the south-east side of the review-ground, has five compartments, a floor-space of 2,300 feet, and is 148 feet in length.

HORTICULTURAL LECTURES IN GLOUCESTERSHIRE: A GOOD SUGGESTION.—In the annual report of the Gloucestershire County Council Technical Instruction Committee, lately issued, W. GUILDEX, F.R.H.S., Frome, Somerset, the horticultural lecturer, states that he has every reason to be well pleased with the progress made during the year. "Not only," he says, "did I receive every assistance from various ladies and gentlemen interested in the welfare of all classes connected with the great agricultural industry, and more especially that part relating to the production of fruits and vegetables for sale and home consumption, but farmers generally are becoming much keener in the matter, and attended both lectures and demonstrations in fairly large numbers. The working-classes are also attending lectures better than formerly, many of them showing by the questions they put and the remarks they made that they take more than ordinary interest in their gardens. The good effect of flower-shows is becoming more apparent each year. In villages where these are held, the best cultivated gardens and allotments are to be found, and the keenest audiences found at lectures." And to further stimulate this good work, Mr. GUILDEX urges that assistance be rendered by the County Council to various deserving, struggling horticultural societies.

GARDENING UNDER DIFFICULTIES.—Garden-lovers will contrive to find a plot wherein to exercise their skill, however unfavourable the circumstances. As a parallel to the back-yard and house-top plantations flourishing in the heart of London, our contemporary, *The Agricultural Economist*, mentions a garden by the entrance of Deptford Creek, which certainly seems an unfavourable situation. "Amidst all the hurry and bustle and noise of the steam winch, there is a garden on the cabin-top of the derrick owned by the General Steam Navigation Company, wherein reside the attendant and his wife. True, its dimensions are small, but it is as pleasing to the gardeners as the best kept garden of the mansion." An illustration shows us the arrangement of the flower-pots and tubs filled with growing and, in some instances, with flowering plants. Such boat-gardens are commonly seen in Holland.

FLIXTON HALL GARDENS, BUNGAY.—Mr. H. FISHER, the head gardener at Flixton Hall, writes that, "In consequence of Sir HUGH ADAIR giving over the Flixton Hall estates to his son, and of a reduction in the garden staff, I leave here October 1, having had charge of the gardens—first with the late Lord WAVENEY, and for the last fifteen years with Sir HUGH ADAIR—altogether over thirty years. During the latter part of the time the gardens have been remodelled, a new kitchen-garden made, and other improvements carried out."

THE SEED HARVEST AT ERFURT AND ELSEWHERE IN GERMANY.—We learn from *Der Handels Gärtner* that so far as concerns summer flowers, namely, Asters, Verbenas, *Dianthus chinensis* and Heddevigii, *Tropeolums*, *Salpiglossis*, Mignonette, good returns are expected if the weather during the present month remains fine. It is to be regretted that on September 4 a sharp hoar frost caused great injury, and amongst other subjects to



FIG. 67.—REPEATED BRANCHING OF THE INFLORESCENCE IN A MALE FLOWER OF CUCUMBER, LEAFY CONDITION OF THE CALYX; ISOLATION OF STAMENS, PRODUCTION OF BIRMAPHRODITE FLOWERS, ETC. (SEE TEXT.)

Balsams, Mirabilis, Ageratum, Dahlias, and various Cucurbits. From other seed-saving centres it is stated at Halberstadt that Cauliflower seed, also Cabbages and Kohl Rabi will yield a small crop; Spinach seed was a good crop; early Peas were a heavy crop, whereas late Marrowfat varieties, on account of the heat at the end of May and in June, suffered greatly; Runner Beans will afford good crops, and

dwarf varieties are satisfactory; the early varieties, on the contrary, are less satisfactory. Flowering stocks in variety show this year a high percentage of double flowers, and the continued drought and warmth have acted most favourably on the quality of the seed; but this is at the cost of quantity, the plants having remained of small stature, and the seed capsules few in number.



FIG. 68.—PORTION OF FEMALE FLOWER AND FRUIT OF CUCUMBER, SHOWING PROLIFERATION, LATERAL AND AXILLARY, PRODUCTION OF SECONDARY AND TERTIARY FRUITS, AND OTHER CHANGES. (SEE TEXT.)

PUBLICATIONS RECEIVED.—*Report on Natal Botanic Gardens and Colonial Herbarium, January to June, 1901*, by J. Medley Wood. "In consequence of a very favourable season, the trees in the Gardens are looking well." Experiments with Indigo, Mangos, and indigenous medicinal plants were successfully undertaken. This report contains some interesting notes dealing with the early history of the Gardens, and showing what improvements have been made in the last fifty years. As regards the Herbarium, a new and better building is to be commenced as soon as possible, the necessary funds being now available.—*Queensland Agricultural Journal*, July, 1901. This number of the periodical is devoted to chronicling the proceedings of the Bundaberg Conference, which "excelled previous Conferences, both in the number of delegates, in the great extent of country represented, in the zeal and earnestness which the delegates brought to their work, and in the many thoughtful papers on subjects of the deepest importance, not only to the single districts, but to the national welfare itself."—*Agricultural Gazette of New South Wales*, July. With papers on: Barless Medick-seed, Green Crops of Winter Fodder, Wheat in the Drier Districts, Report on the 1901 Vintage, Forests of New South Wales, Paspalum stoloniferum, and Trials of Wheat at Nymba.—*Les Végétaux Considérés comme Pluriomètres Eurogétaires*, par Félix Sahut. (Chez l'Auteur, Avenue du Parc-Juvénal, Montpellier.)—*Minnesota Botanical Studies*, July 20.—*Twelfth Annual Report of the Missouri Botanical Garden*. A record of satisfactory work and progress in 1900. Scientific papers included in the publication are: Disease of Robinia psuda-acacia, by H. von Schrenk; Crotons of the United States, A. M. Ferguson; Agave from Arizona, J. W. Toumey; a cristate Pellaea, W. Trelease; a Pacificslope Palmetto, by W. Trelease; and Garden Beans cultivated as Esculentos, by C. H. Irish, already alluded to.—From the Department of Agriculture and Technical Instruction for Ireland, *Abstracts showing the Average under Crops, and the number of Live Stock in each County and Province, 1900-1901*. In the total area under crops in Ireland there has been in the year a decrease of 28,252 acres. There has been an increase in the area under grass, a decrease in cereals and green crops (with the exception of Mangel Wurzel and Beet-root); and an increase in Flax. As regards the numbers of live stock, there has been a decrease in everything save cattle.—*Agricultural Journal, Cape of Good Hope*, August 1. The contents deal with agricultural subjects in general. In the horticultural section are papers on: Disease in Pine-apples, Tropical Fruits, Cure for Orange-root Rot, and Return of Fruit Export for June, 1901.

PLANT PORTRAITS.

- CILICUS SIFENSIS, *Revue de l'Horticulture Belge*, Sept. 1.
- CORFUS THYMSOLOIDES, *Revue de l'Horticulture Belge*, Sept. 1.
- LEUCOBRANKIANA, *Revue Horticole*, Sept. 1.
- MUSA SAPIENTUM VAR. SANGUINEA, *Le Jardin*, Aug. 5, Tropical Africa.
- PILOX MAI CLAVIA, *Melhor's Monthly*, July.
- RYSSIMBERG GONGY, *Revue Horticole*, September. A variety raised by M. Gongy at Fort-de-France on April, in the gardens of Baron Alphonse de Rothschild. It produces fruit in summer and again in autumn, and is recommended as a good market variety.
- ATLASINSA, *Melhor's Monthly*, August.

PROLIFEROUS CUCUMBERS.

IN the course of the summer now fast waning, we received from various correspondents, notably from Mr. Denny, the gardens, Down House, Blandford; Mr. Swan, the gardens, Thorncote, Staines; and Mr. David Martineau, through Mosses, Cannel, specimens of Cucumber-flowers, male and female, all more or less malformed. The malformations were exceedingly curious, so much so that in a rather long experience we have never met with any similar. It is the more remarkable, therefore,

that we should have received all these specimens from widely separated localities within a few days of each other. In essentials these flowers, male and female respectively, were identical, but with various minor differences in detail.

In the case of the male flowers, of which remarkable specimens were sent by Mr. Swan, the sepals were nearly normal, the petals more or less leafy. Within the petals, where in ordinary circumstances we should expect to find the stamens, was a tuft of flower-stalks, each terminated by a globose head of green scales, intermixed with which was a number of more or less perfect but detached stamens, and sundry carpels, free at the edges, which bore numerous ovules. The apex was terminated by a short style, capped with a somewhat globose stigma. The flower was, therefore, hermaphrodite, or at least bisexual, a condition which occurs sometimes in the nearly allied Begonias. The illustration (fig. 67) shows a small portion only of this much-branched inflorescence, together with a male flower proflid, and, on the left, one of the secondary flowers from the proflid flower showing the petals, the stamens, and the open carpels.

The marginal nature of the placenta is obvious, and will be of interest to those who remember the controversy that was waged as to the nature of the placenta of Cucurbits some sixty years since! Others will remember the discussions in our columns carried on some forty years ago by Sir Joseph Hooker, the late Charles Darwin, and others, as to the bisexual flowers of Begonias.

In the female flower the condition of affairs was, making allowance for the difference in sex, very similar. It will be remembered that the outer part of a Cucumber or Gourd is really a dilatation of the flower-stalk into what is called a receptacular cup or tube. With this tube the carpels are blended, so as to become embedded in, and inseparable from it. In some Gourds this state of things is very apparent, because the true carpels project beyond the flower-tube in a more or less dome-shaped prominence at the top of the fruit. Exactly the same condition occurred in the flowers sent by Messrs. Cannell. The flower-tube bore at its margins five stalked leaves, and the true carpels protruded for the space of an inch above these calycine leaves, covered as usual with a rind, the origin of which is one of the puzzles to be solved.

But this state of things was simplicity itself in comparison with what occurred in the specimens figured at p. 229, fig. 68. Here both from the sides of the original receptacular tube, and from its edge, protruded secondary flowers of the most singular appearance. The calyx was represented by five stalked leaves, at the base of which were some minute, thread-like processes, perhaps representatives of stamens, and in the centre a secondary axis in the form of a small Cucumber, often contorted, and bearing a leafy calyx surrounding a mass of imperfect petals and stamens. In some cases tertiary shoots might be seen springing from the sides of these secondary productions, and constituting, as it were, a double or two-fold proliferation.

In brief, the main peculiarities of these flowers were dependent on an altogether abnormal degree of branching in the floral axis beneath and also within the calyx; in the more or less complete substitution of leaves for sepals and petals; in the production by proliferation of tertiary flowers, some axillary, others from the sides of the secondary flowers; in the isolation and multiplication of the stamens; in the production of carpels in the

same flower with the stamens; in the complete detachment of these carpels from the axis, and in the want of union between the margins.

We are afraid Cucumber-growers will not quite appreciate such productions. They may be re-assured by their extreme rarity. Botanists will, however, be interested in these extraordinary deviations from the normal conformation which would be unintelligible without the aid of Mr. Worthington Smith's drawings. *M. T. M.*

GERMAN S.-W. AFRICA.

THE following notes on the flora of Brakwater, in German South-west Africa, were given by our correspondent, Herr Dinter, in the supplement to No. 23 of the *Windhoek Anzeiger*. The trees of this district are chiefly represented by the Mimoseae, not only in the numbers of the individuals, but in the many varieties. Within a few square miles grow no fewer than thirteen species of Acacia. Predominant in the valley is *Acacia Giraffe*, and in places there are groups of very old Karroo Thorn-trees (*Acacia horrida*, the gum-bearing Acacia). The Capparidæ claim the second place; they are represented by three species of *Maerua*, and the well-known *Witgatboom*, whose roots when roasted serve the Boers and others as coffee. On the Glimmerschief Mountains and in their valleys and gorges still grows *Erythrina suberifera*, with its coral-red flowers; a white-barked *Doldenbaum* (? *Peucedanum araliaceum*, *Combretum apiculatum*, *Ficus* sp., *Dombeya rotundifolia*, and three species of *Grewia*, as well as a few less commonly known bushes. No fewer than five species of *Asparagus* are found on the banks of rivers and under the shade of the trees, and two of these are extremely ornamental in appearance. The species of *Asparagus* appear before the rainy season, proving that there is water in the hollows. As *Asparagus*-plants do not push their roots deeply into the soil, they are, as indications of the existence of water, much more trustworthy than *Tamarisks* (*Tamarix articulata*), the Willow-leaved *Sumach* (*Rhus viminalis*), and many species of *Rushes*, and the not-to-be-forgotten *Eloiny-wood* (*Euclea pseudocornu*), which, except here, only appears in the Nami rivers, and in the lower lateral valleys of the *Tsoelamb* in Hereroland. A great number of indigenous plants bloom in the south-west African spring (from about the middle of August to the first rainfall), yet it is not well to be guided by them in digging for water, as either they only need sufficient warmth for them to push their bulbs, roots, or reserve-structures into new growth (*Peucedanum*, *Erythrina*, two species of *Liliaceæ*, &c.); or they are contented with warmth, and require only a minimum of moisture, which they are able to absorb by means of their extraordinarily long roots (*Acacia hebeclada*, *Albizia anthelmintica*, &c.). One tree which always indicates the existence of water at a greater or lesser depth, and flowers first in December and January (although it bears fresh foliage in the spring), is the Karroo thorn (*Acacia horrida*, the *Windhoek* trees). The *Kamelbaum* is accustomed to push very deeply into the soil to secure conditions needful to its growth, yet it is also noteworthy in places where its tow-like roots hang straight down into the water (as at the station). In conclusion, it may be mentioned that a strong decoction of the root of *Albizia anthelmintica* used several times a day is a proved remedy for tape-worm. The tree grows also in Abyssinia, and is there, as well as in Hereroland, used in the same way. The trees abound on

the road from Windhoek to Little Windhoek, and are recognised by their large white balls of flowers, and the freedom from thorns of their thick terminal branches.

A GOOD CROP OF MELONS.

IN a recent issue of the *Gard. Chron.* (to which I am a regular subscriber), I observed, under the heading "Home Correspondence," at p. 151, a letter signed by William Gostling, entitled "Fruitless pursuit of Melons." In reference to this it will, I think, interest your many readers if you can find space for the accompanying photographs of my Melon-house and its contents (fig. 69, p. 231), particulars of which are as follows:—

Dimensions of house, 16 feet \times 8 \times 7; varieties of Melons, two Hero of Lockinge, and green-fleshed fruit, name unknown; date of sowing, March 13; planting out, April 13; and first gathering, August 8.

Hero of Lockinge.—Eight plants planted in soil 2 feet wide, 2 feet deep, 15 feet long. Received no fire-heat after April 1. All attacked and almost destroyed by wireworm; but, notwithstanding, twelve excellent Melons were produced.

Green-fleshed Fruit.—Six plants, planted in six Seakale-pots, 15 feet by 15, produced thirty-two Melons of first-rate quality and flavour, varying in weight from 1 lb. to 2 lb.

These Melons were grown by my gardener, Mr. W. J. Cosham, W. Edward Oswell, *Hillside, Groombridge, Kent*.

HOME CORRESPONDENCE.

PENTSTEMONS.—We seem not to produce Pentstemons for exhibition in the south as they are presented in the north. There were some superb stands of them in the flower show at Glasgow at the end of last month, and when with Leisure I looked over a fine collection of them in Messrs. Dobbie & Sons' Hillside Nursery at Rothsay. I noted a few that seemed to be much finer than are commonly grown near London. Where the flowers are, as is seen in these newer ones, produced in long spikes of some 14 to 15 in., they present very attractive objects. Specially fine were Gem, with a crimson throat heavily pencilled on a white ground; Antique, very large, and purple in colour; Auguste Cain, brilliant scarlet; Le Prophète, reddish-pink, white throat finely margined with colour; Santillene, deep rich crimson; Jeannie Deans, reddish-carmine, prettily pencilled; Paul Verlain, crimson, pure white throat; Duke of Fife, cherry-pink; Miss Wilson, glowing reddish-scarlet; Norah May, brilliant scarlet, white throat, &c. Many others might be mentioned, but these suffice. Anyone getting say a dozen of such varieties will find them seed freely, and they can easily raise others in that way, probably not less fine. Good forms are easily propagated by putting in young tops as cuttings now, and keeping them through the winter in pots on a greenhouse shelf, or in a frame; or they may be put out under handlights in sandy soil, if beneath a south wall or fence. Few border-plants are more easily grown, and if good culture be given, remarkably fine spikes can be had in the south as well as in the north. *A. D.*

BASIC SLAG.—As regards the virtues and uses of basic slag, I can fully endorse all that your correspondent, Mr. Molyneux, said in a recent issue of the *Gardeners' Chronicle*, but I would warn intending users not to place it where young pheasants are likely to be reared next spring; cases having come under my notice of young birds dying by the dozen on ground dressed the previous autumn, but on being removed to other fields which were not dressed with this substance, the mortality

immediately ceased. The reason I do not know. I only state facts which may save much trouble and annoyance, as the shifting of some hundred pheasant coops takes no small amount of time, to say nothing of the loss of the birds. C. Bailey, Leigh Holme, Leigham Avenue, Streatham, S.W.

WALL GARDENING.—The further particulars given by "Stoncrop," vide p. 156, makes the case clearer; and with the information as to the wall-top, a more definite answer can now be given. Firstly, the top is a fixture; and in answer to (2) Stoncrop will find it much better to fix the bricks on edge not in mortar but rather in cement or strong gauged stuff, viz., mortar two parts, cement one part. If the bricks are not too dry when fixed, this mixture will make a strong joint, particularly if it be not wiped off or "clean struck" on the inner face. The only other principal point to be answered is embodied in No. 5, and without

such a position. The pale green rosettes covered with their downy web in the one species is only equalled by the crimson colour of the rosettes in spring in the other kind; the colour showing finely through the more sparsely-webbed rosettes. So far as the list originally given is concerned, it cannot well be bettered; for the plants in the majority of instances are the most suitable, the hardiest, and most enduring that could be chosen; and I have mentioned no plant that I have not in the past tested for this purpose, and with a smaller quantity of soil. In my own case, however, I tended the plants, and knew their requirements, and took care they were not neglected—and this is of paramount importance. As regards the planting, I would urge that with so much space to cover, small pieces of healthy, well rooted plants, not mere seraps, be employed. This dibbling-in of small plants tightly and firmly is much the better method of covering a large area quickly; and

Brunton, admitted that the situation was bleak, and the soil unsuitable. Notwithstanding these drawbacks, here is to be seen one of the finest collections of Apples, Pears, and Plums to be found in the north. All the walls are covered with trees that are pictures of health and productiveness, and these remarks apply also to bushes and pyramids grown in the open. The crops are abundant, the fruit of the highest quality. The question arises: how are such results achieved? It is by using young trees and good varieties, and by proper feeding and methodical root-pruning. This last is the most important of all, for when it is regularly and skilfully done, there is no such thing as failure, and summer and winter pruning of the branches is reduced to a minimum. W. L.

NEW MELON ROYALTY.—This Melon received an "Award of Merit" from the Royal Horticultural Society last year. The fruits are the result of a heavy second crop from plants which produced a heavy crop of large fruits earlier in the season, and are in consequence not so large as those of the first crop. Two crops of Melons have been grown in the same border regularly every year for the last five years without changing the soil. The plant has a vigorous constitution, is a free setter and good bearer. Fruits medium-sized, roundish; skin yellow coloured, and finely netted. Flesh white, firm, sweet, juicy and melting. This is quite a new type of Melon, and differs from all others I know, in not cracking round the fruit-stalk when ripe. I have never known the fruits to split under any circumstances whatever; and they will keep in good condition after they are ripe for a week or ten days. A. Pettigree, Castle Gardens, Cardiff. [An excellent sample was sent; juicy, and of good flavour. Ed.]

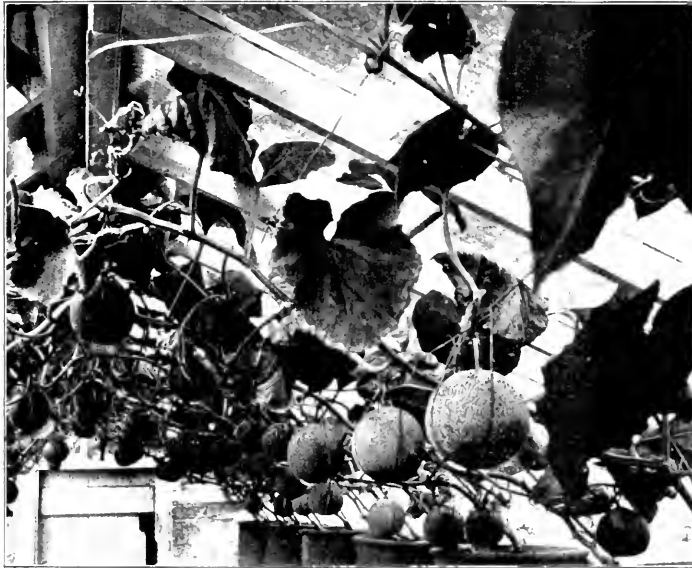


FIG. 69.—A GOOD CROP OF MELONS GROWN IN THE GARDEN OF W. EDWARD OSWELL, ESQ., HILLSIDE, GLOUCESTER. (SEE P. 230.)

hesitation I would say the success is assured if the plants are given each a compartment of a yard in length and with some 1 inch of soil in depth. The base of hard stone will favour the success of the subjects rather than otherwise, by reason of the uniformly cool temperature which the roots will live under. Much of the success, however, will depend upon attention to affording water to the soil, as the position will favour evaporation; but this contingency may be modified by leaving, say, ½-inch space at the surface for holding water, and making the surface level. One cannot quite agree with the all-sweeping disparagement of "Stoncrop" in respect to House-Leeks, particularly as, at p. 137, I only favoured the "webbed" kinds, *S. arachnoideum* and its vars. I think if your correspondent were to establish a patch of either *S. arachnoideum rubrum*, or *S. a. Lageri*, on his wall, or both, for they are distinct enough, he would not regret having done so; for what can be better than a plant that is both picturesque and beautiful from January to December? and seeing it is so perfectly hardy, and requires so little attention, it is one of the first I would select for

with Campanulas, Aubrietias, some Saxifragas as *Aizoon* vars, and *Inglata* in may be easily done; and again with the *Sempervivums* above-named. Indeed, in their case it will be best to mix the loamy-soil freely with broken brick, old mortar or granite chips, and prick out the rosettes an inch or so apart over the area. The *Onosma* patch may also have old mortar or granite mixed with the soil, and a mulching of the same put on the surface. This plant must be well established previously. The two species of *Erdraianthus* given at p. 137 should also be planted in the same manner as the *Onosma*, while all else may be accepted as thriving in good loamy soil, to which a fair proportion of grit has been added. Indeed, the plants given in the first note were specially selected for hardiness, free-flowering, and general adaptability for this kind of work. E. H. Jenkins.

FRUIT-GROWING IN CLEVELAND.—It has been said that Yorkshire is of no importance as a fruit-growing county. When passing through Potto recently, I visited the gardens of Mr. J. Richardson of Potto Hall. The gardener, Mr.

DIAMOND JUBILEE GRAPE.—It is interesting to find that the chairman of the R.H.S. Fruit Committee and two of his colleagues should have found at Glasgow that Diamond Jubilee Grape was of "commanding" appearance and "splendid" flavour. Culture, or some other conditions, must have done much for the Grape since it was shown at the Drill Hall and tasted by the Fruit Committee on September 26, 1899, when it was declared to be too much like Black Morocco. But whether resembling that inferior Grape or not, in my opinion there was nothing in the sample then placed before the committee that entitled the Grape to the expressions "commanding," or of "splendid flavour." If, however, the Grape has so much improved, especially in flavour, let it be sent to the Drill Hall again. If it does not come, we may draw our own conclusions. A.

BIRDS FEEDING ON WASPS (see p. 197).—I have noticed for many years that cygnets eat wasps, but that swans do not. D.

CACTUS DAHLIAS.—We are getting on somewhat rapidly with new Cactus Dahlias. Already no less than twenty-three have received awards at the Crystal and the Drill Hall. There is yet at this time of writing to be held the Dahlia Show at the Westminster Aquarium and the next meeting at the Drill Hall, at both of which we shall see honours awarded; and it is but natural to suppose that by the end of the month the new varieties getting awards will have reached to forty. If so, that will help to show the public that when called upon to pay big prices for new varieties, the game is not worth the candle. If those responsible for the giving of these awards do not set up a very much higher standard than now exists, granting awards to seedling Cactus Dahlias will have become ridiculous. Flowers are good enough and varied enough. It is time that stout, stiff, erect stems to carry the flowers was made an absolute requirement. A., Kingston.

LILIES FROM SEED.—With reference to Mr. C. Wolley-Dod's note under this heading in your issue of September 14, the idea that the seed of a bulbous plant can acquire the cha-

raeter of a flowering-bulb, especially of so large a size as characterises Lilies, without previously forming any superterrestrial growth, appears to me to be so utterly opposed to current ideas, that I, and probably many other readers, would be glad to know upon what data it is based. The publication of these would doubtless tend either to encourage the experiments suggested by Mr. Wolley-Dod, despite the length of time or care and observation involved, or, on the other hand, to save trouble all round by their obvious fallaciousness. So far as I am aware, all underground formations, except of cryptogamic plants like fungi, are effected either through the direct action of light upon the foliage, or, on a smaller scale, by utilising a store of nutrients laid up in a tuber, corm, or seed by the same means, the extent of the subsequent growth being determined entirely by the amount of nutrient so stored, plus that which may be acquired by another generation of leaves. Bulbous plants depend, I believe, entirely for their annual re-appearance upon the previous year's foliage being allowed to perfect, and die down in such a way that this function of storage, i.e., replacement of the exhausted bulb by a fresh one, can be effected. If this be the rule, as I believe it to be, how can a Lily, or any other bulb or massive growth fulfilling like functions, be developed subterrestrially without any foliage apparatus at all for collecting the carbonic acid from the air, which plays so essential a part in its formation? My own impression is, that under certain circumstances Lily-bulbs are capable of remaining dormant for a season, and it may be several, and that such being forgotten, are imputed, on their re-appearance in full vigour, to seed, as implied by Mr. Wolley-Dod's note. Beyond this, I am at a loss to form a theory as to how such a subversive notion could have arisen. *Chas. T. Drayey, F.L.S., V.M.H.*

TOMATO "GOOSEBERRY."—In the report of the recent fruit show at Glasgow, mention is made of a Currant-Tomato shown by Messrs. Dobbin & Co., of Rothsay, as having exceptionally long sprays or racemes of fruits. I recently saw this very curious and interesting variety grown at Rothsay in one of the firm's houses. It emanated from the Red Currant form, so well known for its small red fruits borne in clusters 6 inches long, and so pleasantly flavoured. The fruits of the new variety that had been temporarily named as above were about the size of good cherries, but the racemes hung down to lengths of from 24 to 30 inches. On one of these I counted no fewer than forty-six fruits or embryo fruits. It is not in the least similar to the Glory of Italy variety. I have not seen amongst Tomatos anything more ornamental, whilst for dessert the fruits are admirable. I have thus referred to it because it is so novel and attractive in appearance. *A. D.*

ASTER SINENSIS.—Single-flowered forms of *Aster sinensis* are becoming popular, and the flowers are certainly very useful for cutting and for general decorative uses. I have just received from Messrs. B. S. Williams one of the most lovely single varieties I have yet seen. I have grown the blue, white, and mauve colours, but I was not aware that there was a pink variety in cultivation. This is certainly one of the most beautiful single *Asters* I have seen, and the form is all that could be desired. The largest of the flowers sent to me measured 5 inches across, and the colour is a soft pink. This variety, together with the others named, should make pretty beds, when mixed or in separate colours. But their chief uses will be for decorative purposes when cut. *Thos. Arnold.*

SUB-TROPICAL BANANA-CULTURE.—May I be allowed to make a short remark on the article on the Jamaica Banana trade, on p. 180 of the *Gardeners' Chronicle*. The author writes that the *Musa chinensis*, so well known from its common culture as a fruit-plant under glass, is suited to sub-tropical conditions. I have tried many *Musaceæ* here, and lost most of

them. Among them is the *M. chinensis*, which, though it resisted for some years, always lost its leaves in winter as soon as the temperature touched the freezing-point. The very severe frost last winter killed this species, even its underground part; while the ordinary *Banana*, *M. sapientum*, even retained its leaves intact to some extent, though the fruits were nearly all crippled in their development, and none reached perfect maturity, as is the case even here, at the extreme northern limit of *Banana*-culture in the open. I understand that nowhere in sub-tropical countries, where the temperature at any time sinks as low as the freezing-point, can *M. chinensis* be cultivated for its fruits; but should be glad to learn otherwise, as I should be very pleased to communicate with persons who know of good varieties of Bananas which can resist cold. *A. R. Proshchensky, Parc Les Tropiques, Chemin des Grosheux St. Hélène, Nice (Alpes Maritimes), France.*

NURSERY WORK IN SOUTH AFRICA.—In reply to an enquirer in a recent issue, I may say that I spent two years in a South African nursery, and should be pleased to give information to your correspondent. The Editor has my address. *J. W. M.*

GRAPE LADY HUTT.—Very suspicious are some gardeners in the matter of new introductions, and over nothing more than new varieties of Grapes; not that they are altogether to blame, for on several occasions varieties have been belanded without due reason, and in the case of this handsome variety it is only exceptionally clever cultivators that have given to the Grape at its best. I have met with it in various parts of Lancashire, and have always spoken in its favour. One of the first to show it in good style was Mr. Upjohn, the Earl of Ellesmere's gardener, Worsley Hall; and on a recent visit to Knowsley Hall I found Mr. Doe had it in grand condition—large, beautifully-formed bunches, berries of first size, and rich colour. Mr. Doe will be conferring a public benefit if he can be persuaded to exhibit bunches of this valuable late-keeping Grape at some of our autumn exhibitions. *Orchid.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

SEPTEMBER 10.—*Presided*: Dr. M. T. Masters, F.R.S., in the chair; Messrs. Jogg, Holmes, Drury, Mawley, Chapman, Dr. Cooke, Rev. W. Wilks, and Rev. Prof. Henslow, Hon. Sec. Visitor, Mr. Crawshaw.

Salon Seedlings.—Mr. HOLMES called attention to curious differences in the colouring of the flowers of *S. maximum*. He observes, "The flowers as seen at Kew on the rockery are green. Those of the variety *purpureascens* (or *atropurpureum*) are purplish, as well as the leaves and stem. In the plant exhibited the colouring appears to follow the development of the flower. The unopened buds have a purplish tinge, which seems to disappear when the protuberant stamens emerge, these then assume a pinkish purple tinge. Finally, when the flower opens, the ovaries are at first green, but subsequently assume the same purplish tint. This looks as if it were adapted, in the first place, to attract insects to the flower when the anthers are mature, and secondly to the ovaries. The flowers on the corymb show some flowers with green ovaries, and some with purplish ones."

Fungus pests of the Carnation family.—A long paper on the diseases of Carnations and other genera of the Caryophyllaceæ attacked by fungi, in which every species is described, accompanied by two plates, was presented by Dr. M. C. Cooke, who gave an interesting abstract. The paper will be published in full in the *Society's Journal*. An unanimous vote of thanks was given to Dr. Cooke for his valuable contribution.

Botanilla with Foliaceous Flowers.—Rev. C. WOLLEY-DOD sent specimens of *P. nepalensis*, in which the parts of the flowers were replaced by tufts of minute green leaves.

Malformed Vetch Leaflets.—Miss ARMISTEAD, of Ross, sent specimens of the foliage of a Vetch, in which the

leaflets in many cases resembled Pea-pods. A somewhat similar result from the puncture of insects is known to occur to *Pistacia lentiscus*. In this case it is probably due to an aphid or a mite.

Begonia Sabulosa.—Mr. WILKS received and exhibited a flower, one petal of which was partially green.

Epilobium monstrosum.—Mr. RASOR, of Woolpit, Suffolk, sent malformed flowers, observing:—"In a ditch some 40 or 50 yards long were growing hundreds of *E. hirsutum*, one particular batch of which, containing about a score of plants, had flowers similar to those sent. You will observe that instead of the usual rose-coloured petals they are much reduced in size, and have but a faint tinge of colour on the margin." The essential organs were quite perfect, the pollen being shed in the bud, the pistils finally setting abundance of seeds, though the flowers were quite unattractive in appearance to insects.

Obolodossium discolor.—Mr. CRAWSHAW asked for information as to the cause of the tips of leaves becoming yellow, brown, and black. The spots appear to start anywhere, and in his opinion were endophytic. It has been known for some six years, and though often examined, no fungus has yet been discovered. It appears on leaves of the first bulb and on young and old plants, though they may be otherwise perfectly healthy and causing no difference in the flowers. No interpretation has as yet been found for the phenomenon.

Cultivator trees.—Rev. W. WILKS asked, on behalf of a correspondent, how these trees, presumably the *Bombax* or *Eriodendron* of S.W. Africa, could be destroyed. The large trunks are so soft that the timber cannot be sawn or cut with an axe. Moreover, the natives will not attempt to destroy them, for fear of the spirits which they suppose to reside in these trees. Gunpowder and dynamite were suggested, and saturating with saltpetre and then burning might probably prove effective.

Bark stripped off.—Dr. MASTERS referred to an inquiry made at a previous meeting with reference to strips of bark of an oblong shape, neatly taken off the branches of Larch trees; no interpretation could then be given. It has been now suggested that the strips in question may have been picked off by myriathelids for the purpose of nest building.

Plant Roots Discovered.—Mr. VETCH sent some specimens, which Dr. COOKE undertook to examine and report upon.

Vitis sylvatica deltoideognona.—Mr. HENSLOW exhibited specimens of this plant in flower and in fruit, observing that he had never found it otherwise than with deltoideognona buds, which are borne in all the axils of the leaves, whereas in *V. odorata* and *V. hirta* they only occur on the runners, concealed beneath the leaves. Though not alluded to by Hooker in the *Standard Flora*, it seems to be a very important distinction between *V. cinnam* with *V. sylvatica* and the last two mentioned. The structure of the buds is much the same in all, the petals being reduced to minute green lanceolate structures, the five anthers having spoon-shaped connectives pressed down upon the summit of the pistil. This has a short curved style with truncate stigmatic orifice.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 5.—There was a fair display of plants at the meeting held on the above date. S. GRATIEX, Esq., Whalley Range (gr. Mr. Cypher), exhibited *Cypripedium* × *Maudie* Gratiex's var., a finely shaped flower with a good proportion of white in the dorsal sepal. *Cypripedium* × Mrs. Chas. Canham var. *aureum* (an albino form of this hybrid) received an Award of Merit. *Laelio-Cattleya* × "New Century," a cross between *Cattleya velutina* × *Laelia elegans*, received the same award.

The choicest plants in the exhibit was *Cattleya* × *Chlorochrysantha*, a cross between *Cattleya Leopoldi* × *Cattleya Dowiana aurea*. The sepals and petals were of a bronzy-bronze, a beautiful sheen being on these segments, the lip was intensely dark and well shaped (First-class Certificate).

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers), sent a few nice plants, *Brassia Wraye* being nicely in bloom. A fine variety of *Cypripedium Spicerianum magnificum* received an Award of Merit, a similar award going to a fine cross between *Cypripedium tonsum* × *C. Lawrenceanum*.

T. STATTER, Esq., Whitefield, exhibited a hybrid between *Cypripedium levigatum* × *Rotischildianum*.

Mr. W. HOLMES, Timperley, exhibited *Cypripedium insigne* var. *aureum*.

Messrs. CHARLESWORTH & Co., Bradford, exhibited some good plants, the best of which was *Cattleya* ×

Hardyana Charlesworth's var., a spike bearing three magnificent flowers of fine substance and rich colour, which was awarded a First-class Certificate, and other plants exhibited by this firm were *Mitronia* x *Petersiana*, *Oncidium incurvum album*, *O. orthothelychium album*, *Cattleya* x *imbriata* var. *maculata*, *Cyclopedium* x *str* Redvers Buller.

Mrs. Briggs sent a new cross between *Cattleya bicolor* x *gracis*, showing the characters of both parents plainly (Award of Merit). Other plants from the collection were *Cyclopidium* x *Maudslayi*, a fine plant; *C. x Milo*, and *C. x tonsium* x *onitulum superbum*, P. W.

EAGLESFIELD HORTICULTURAL.

SEPTEMBER 7.—The annual show under the auspices of the Eaglesfield Horticultural Society was held on Saturday in a field at Newlands. The show is the largest in the north of Scotland, the entries over all classes numbering 2,000, and it proved very successful, over 3,000 persons visiting it in the course of the day. Cut flowers were strong all over, but pot plants, as has been the case at all shows in the district this season, were backward. The open class was particularly good, *Cactus*, *Flow*, and fancy *Dollias*, *Marzoccos*, and *Asters* being excellent, and *Peas* fairly good.

The prize-takers were Messrs. A. D. MESSING, Mossknowe, W. D. Webster, Springhill, G. J. E. JOHNSON-FLETCHER, Esq., and J. HEWISS, Sunnybrae, for pot plants; and for cut flowers, Messrs. EWEN CAMERON, Ernie-stane, W. R. HOBSON, Langholm; J. TELFORD, Langholm; J. A. W. TWEEDE, Monkswald; and R. JOHNSTONE, Lochmaben. Baking Apples were the chief features in the fruit. Mr. W. A. FLEMING, Starkey Tower, taking 1st prize; and Messrs. E. CAMERON and WEBSTER were 1st for black and white Grapes respectively, with outstanding bunches.

VEGETABLES, ETC.

were not so strong as in some of the other classes, but Onions and Leeks were of extra good quality. The quality of the cut flowers was exceptionally fine, the quilled and flat pedicel *Asters* being among the features of the show, while Parsnips, *Dollias*, and Gladioli were also good.

Begonias were the only outstanding feature among the pot plants in the amateurs' class, but cut flowers were very creditable, especially *Roses*, *Antirrhinums*, *Asters*, and *Dollias*. Mr. J. GARDNER, Lockerbie, was 1st for *Antirrhinums*, with a stand which was considered the best of a considerable time.

Messrs. KERR BROTHERS, Dumfries, had on exhibition a stand of beautiful *Cactus Dollias*, of the late 4 kinds; while Messrs. J. PALMER & SONS, Annan, showed a number of new H.P. Tea, and hybrid Tea *Roses*, and Messrs. E. F. FAIRBAIRN & SONS, Carlisle, foliage plants, *Fuchsias*, and *Begonias*.

DERBY HORTICULTURAL.

SEPTEMBER 11, 12.—The fortieth annual show of the Derby Agricultural and Horticultural Society was held at Derby on the above dates. The horticultural tent was exceedingly well filled with fruit, cut flowers, plants, and vegetables of the best quality. The entries in the group class were not quite so numerous as in previous years, but the arrangement and quality of the plants employed were of the highest merit.

Mr. J. WATLING, to T. H. OAKES, Esq., Riddings House, Alfreton, Derby, who has taken the premier honours in this class for several years in succession, was again successful in winning the 1st prize. Mr. Thomson, gr. to G. H. TRINER, Esq., Littleover, Derby, was 2nd. Mr. G. S. SHARP, nurseryman, Huddersfield, and Mr. Geo. Woodgate, gr. to Sir AUGUST MOSLEY, Bart., Rotherham Hall, Burton-on-Trent, were 3rd and 4th, respectively. Five well-known competitors competed in the class for a decorative desert table. Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, was 1st. Mr. Dove, gr. to Lord SAYLE, Rufford Abbey, Nottingham, was 2nd. Mr. Bead, gr. to the Earl of CAMERON, Bretby Park, Burton-on-Trent, taking 3rd, 3rd, and 4th, in the order of their names.

Grapes, both black and white, *Melons*, *Peaches*, and *Nectarines*, also *Apples* and *Pears* were numerous and of first-rate quality; Mr. GOODACRE taking 1st in both classes for *Grapes*, and for *F. A. BRACK*, Esq., Dovebridge Hall, Derby, being 1st for *Melons*, and Mr. D. SMITH was 1st for kitchen and dessert *Apples* and *Pears*.

In the cut flower classes the *Roses*, *Dollias* (show, *Cactus*, and *Pomponis*, *Asters*, and zonal *Pelargoniums* were very fine. Messrs. C. CARLINGTON, J. WOOD, and T. HEMMINGS were the principal prizewinners.

The vegetable classes were strongly contested, Mr. J. RAY taking 1st prize for Onions and Carrots; Mr. H. D. SMITH for *Tomatoes*, *Cabbage*, and *Cucumbers*; Mr. J. YOUNG for green *Vegetable Marrows*, *Cos Lettices*, and white round *Potatoes*; Mr. G. WADSWORTH for white *Vegetable Marrows*; Mr. G. WOODGATE for Red Cabbage, *Peas*, dwarf *Beans*, *Betroot*, herbs, and *Parsnips*; Mr. J. MASON for white and red kidney

Potatoes; Mr. J. CHAIKIE for red round *Potatoes*, Mr. T. EARLE for Scarlet *Tomatoes*, and red *Celery*; and Mr. A. BUCKLEY for white *Celery*.

The tents containing the products of the amateurs and cottagers are, as a rule, well filled, this year proving no exception, the plants and vegetables being exceptionally fine, &c. &c.

MID-ANNANDALE HORTICULTURAL.

SEPTEMBER 14.—The annual show of the Mid-Annandale Horticultural Society was held on the date named in conjunction with the agricultural show, on the Cricket Field, Moffat, in favourable weather; and there was a large attendance of visitors.

The horticultural exhibits, numbering 21, consisted of 791—the amateurs' class accounting for an increase of eighty, and the cottagers' class of forty-three. The quality of the flowers was better than last year, and the show was a splendid one all over. Cut flowers were excellent, especially *Cactus Dollias*, *Asters*, *Sweet Peas*, and *herbaceous plants*.

In the gardeners' class, there were three very fine tables of zonal *greenhouse plants*—see list by letter, and the prizes for these were allocated as follows:—1st, Mr. EWEN CAMERON, Ernie-stane; 2nd, Mr. LEVE FRASER, Craigmile.

In addition to these exhibitors, the principal prizewinners in the department were Messrs. ADAM Rankine, Viewlands; J. RAFFAEL, Laneshawbank; JOHN HAMILTON, Haywood; WILLIAM Rankine, Ganderholme; J. A. REIDON, Craigmile; and JAMES HENDERSON, Elmhank Lodge, Dumfries. Among the vegetables, *Potatoes* and *Onions* were exceptionally good.

Stands of *Dollias* were on exhibition by Messrs. KERR BROS., Dumfries; and Messrs. T. KENNEDY & CO., Dumfries; and of *Roses* by Messrs. THOMAS SMITH & SONS, Stranraer; and Messrs. F. PALMER & SONS, Annan, &c. &c.

WARGRAVE GARDENERS'.

At the last meeting of the above Association, the Chairman Mr. W. H. SMITH read a very useful paper on "Dahlia Culture." A short history of the Dahlia was first given, with the various improvements which have taken place in the plant, after which the modes of propagation by cuttings, roots, and tubers were explained, and hints given as to successful cultivation. A list of the best growers was published, so as to assist in bringing the plant to such perfection as we now know it to be.

A good discussion followed the paper, and a hearty vote of thanks was accorded Mr. SMITH.

Some excellent blooms of *Cactus*, *Dollias*, were exhibited by Mr. SCOTT and Mr. HASKELL, a fine specimen plant of *Begonia Welbyana* by Mr. ROBINSON, and good *Onions* and *Parsnips* by Mr. W. J. LITTLE, &c. &c. &c.

ROYAL CALEDONIAN HORTICULTURAL.

The following awards were made to the undermentioned exhibitors at the Royal Caledonian Horticultural Society's show in the W. G. Market, Edinburgh, last week, but arrived too late for insertion in our last issue.

Mr. JOHN DOWIE, Moffat, 1st, Silver-gilt Medal, and special award for group of plants, &c. Messrs. R. H. LAIRD & SONS, Ltd., Silver Medal, and special award for decorative group. Small Silver Medal and awards to the following: Messrs. CUMMINGHAM FRASER & CO., Conely Bank, Mr. CUTBERTSON, Rothsay, Messrs. COCKER & SONS, Aberdeen, Mr. FORBES, Hawick, Mr. IRVING, Jedburgh, and Mr. E. KILPATRICK, Wemyss. Special award for best *Cactus* by Messrs. J. & SONS, Mr. PHILIPS, Granton Road, Messrs. KERR BROS., Dumfries, Messrs. J. GRAVE & SONS, Perth, Messrs. A. LISTER & SONS, Rothsay, and Messrs. CAMPBELL & SONS, Blantyre.

In addition, the Certificate awarded to Messrs. LAMB & MATHER'S new *Carrot* noticed last week, an Award of Merit was accorded to "Gala Day," a superb white sort of good form, from Mr. C. FIELDING, Larkhall.

DAHLIA SHOW AT THE ROYAL AQUARIUM, WESTMINSTER.

SEPTEMBER 17, 18.—The annual Dahlia show which opened on the above date at the Royal Aquarium, Westminster, arranged and carried through by Mr. R. DEAN, was a decided success. The competition for prizes scheduled in seventeen classes was keen.

In the amateurs' classes, Mr. JOHN WALKER, Thame, took the premier award for best twenty-four blooms of show and fancy *Dollias*; Mr. CHARLES TURNER, Slough, being a good 2nd, Messrs. J. K. TRINER, Henley on Thames, was 1st for one dozen blooms, Mr. H. L. BROWN, Sidcup, was 1st for best

nine varieties *Cactus Dollias* in the amateurs' classes, Mr. JOHN WALKER for twelve single varieties, Mr. CHARLES TURNER for twelve bunches *Pomponis*, and Messrs. J. BURBELL & CO., Cambridge, for twelve bunches of *Cactus varieties*, Messrs. KEYSER, WILLIAMS & CO., E. WESS, S. COOPER, and K. THOMAS, secured premier honours in the minor classes, Mr. W. V. SEALE and Mr. NEEDS show the best decorative vase.

Miscellaneous subjects were very numerous. "Hobbies," Ltd. (Derham) staged a grand mass of *Cactus Dollias* which carried off the gold medal. Gold medals were also awarded to superior miscellaneous groups shown by Messrs. JONES & SONS, Shipway, H. CANNELL & SONS, Swanley, J. BURBELL & CO., Cambridge, HOBBS & CO., Rothsay, and SEALE, Sevenoaks; silver-gilt medals to Mr. H. J. JONES and Mr. T. S. WALKER, and silver medals to Messrs. W. CURRIE & SON, and Mr. J. SCHMAN for miscellaneous groups, Messrs. PEGAS & SON, and A. YOUNG & CO. also staged splendid *Begonia*,

CERTIFICATED VARIETIES.

In the class for three vases, each containing nine blooms, arranged with any kind of foliage, the 1st prize was awarded to Mr. M. V. SEALE, Sevenoaks, 2nd, Mr. J. WALKER.

The certificated varieties were *Cactus*, Mrs. H. JONES and Spotted Queen, both from Mr. J. T. WEBB, Sador Prince, from "Hobbies, Ltd." (Mr. J. GIBSON); Mrs. Edward Maxwell, Lady Jean, and Glio, from Messrs. BURBELL & CO., John Bull, from Mr. S. MORTIMER, Ringrove, Gabriel, and Ophir, from Messrs. KEYSER, WILLIAMS & CO., Chloë, Goldfinch, Clara Street, and G. W. Tullock, Messrs. Winstanley, Lilac, and Rufus, all from Messrs. SIDBARTH & SONS, Show Dahlia Merit came from Mr. C. TURNER.

Peppon Varietas Mildred, from Mr. C. TURNER, Beauty of Sevenoaks, from Mr. M. V. SEALE, Irma and Minnie, both from Mr. C. TURNER. Singles—Robin Adam and Royal Sovereign, both from Mr. M. V. SEALE. Many of these varieties have been described in these pages.

MISCELLANEOUS EXHIBITS.—A source of interest was afforded by the Leeks and Onions exhibited in competition for Messrs. HOBBS & CO.'s money prizes. Of Onions there were thirty-four, and of the former fifty-four entries.

For 5th International Leeks, 1st, Mr. W. LIDDE, Newbury, 2nd, Mr. M. V. SEALE, gr., Brent Manor Park, Longborough, 3rd, Mr. G. CORE, gr., Torrence, Castle, K. Kilbride, S. B.

Onions were less conspicuous for good quality. 1st, Mr. E. BOKETT, gr. to Lord ALFENHAM, Elstree, 2nd, Mr. C. DREW, Clifton Foliat, Berks; 3rd, Mr. J. BOND, gr. to W. E. S. DUNN, Esq., Olding Towers, Wye, Kent.

The 1st prize dish of six Onions weighed 15 lb., and the heaviest bulb of 2 lb. The 1st prize Leek had an average length of 13 inches, of blanching stalk, and a circumference of 6 inches. There were excellent Parsnips, Carrots, Grounds, and Pumpkins exhibited.

Obituary.

GEORGE DAVIDSON, M.A., LL.D.—We regret to have to announce the death of Rev. George Davidson, LL.D., parish minister of Logie-Coldstone, Aberdeenshire, which occurred on Monday, 16th inst., at the Private Nursing Home, Aberdeen. Dr. Davidson was well known in science circles, and so far back as 1886 the University of Aberdeen, in recognition of his distinguished attainments as a scientist, particularly in the department of microscopic botany, conferred on him the degree of LL.D. Through his researches in the region of diatoms, in which he brought to light several new forms, he was practically the discoverer of the "Kieselguhr" deposits in the Loch of Kinnard, near Dinnet, a soft stone now largely utilised in the manufacture of dynamite. In this particular line his name was well known to those German savants pursuing the same line of inquiry and investigation. Dr. Davidson was an enthusiastic member of the Meteorological Society of Scotland, and sent his reports to the Society's headquarters every day with unflinching regularity. Not only was he a scientist, but Dr. Davidson was also a mechanic, and was wont to devote part of his time to the construction of mechanical appliances. In the matter of horology he also took a deep interest, and had a large collection of clocks in which he took particular pride, taking the time himself every day at noon from the sun and at night from the stars.

C. M. SKINNER.—Whilst returning from an agricultural show at Knutsford on the evening of the 7th inst., Mr. C. M. Skinner, who had been connected with the firm of Messrs. Clibrans, of Altrincham, for twenty-three years, was thrown from the trap in which he was riding, and alighting on his head, sustained injuries to which he succumbed a few hours later. The deceased served his apprenticeship with the nursery firm of Peter Robertson, of Edinburgh, and afterwards went to Messrs. Clibrans, of the Oldfield Nurseries, Altrincham, where of late years he had filled the position of cashier. The interment took place on the 14th inst., and was largely attended, several deputations representative of the Altrincham Gardeners' Association, the Conservative Club, and other organisations being present. The wreaths and other floral devices sent by sorrowing friends were both numerous and beautiful. Mr. Skinner was an active member of the Altrincham and Bowden Horticultural Society, and was much liked and highly respected in the district. He was 47 years of age.

TRADE NOTICES.

M. FLORIAN RADL has relinquished his post as head gardener to the firm of Dammann & Co., nursery and seedsmen, at San Giovanni a Teduccio (Naples), and established himself at the same place as plant and seed merchant, under the title of Fava & Radl.

A SWINDLER.—A correspondent wishes to warn nurserymen and others against a man who answers advertisements for Pelargonium cuttings under pretence that he is a superintendent of a public park.

EMPTIES.—Perhaps some of our market friends can supply an answer to the following queries: 1. What remedy have salesmen against grocers using their "empties" for the benefit of other salesmen in the same or other markets? 2. Can railway companies be compelled to disclose the sender's name, if a salesman sees his own empties carried by them to the address of other salesmen; and can railway companies be compelled to give up such empties, whether filled with goods or not, during transit?

THE REIGN OF THE LILY.

WHILE what may be termed the autumnal Lilies, such as *Lilium auratum* and *Lilium speciosum*, are by far the most valuable, those which appear at an earlier period, when flowers are more abundant, would probably be more appreciated but for the predominating influence and fascination of the Rose. One of my earliest Lilies this season, coming immediately after *L. davuricum* (whose finest variety is *L. d.* in comparable), was that exquisite Japanese miniature Lily, *Lilium rubellum*; its colour is pink, a hue among Lilies somewhat rare. It only grows about 1 foot high, as a general rule, and seldom produces more than two or three flowers, frequently severely limiting itself to one solitary bloom. When I add that it is not an upright grower, but like several of the speciosums, has a regrettable tendency to bend forwards, thereby necessitating the assistance of a short stake, I have sufficiently indicated its merits, as well as its limitations. It is not, in my opinion, nearly so precious a possession as its predecessor, *Lilium Kramerii* (originally called "*Kramerianum*"), also a native of the mountains of Japan, for the latter is of much loftier growth, and generates larger and lovelier flowers; but, on the other hand, as I have already learned from experience, *Kramerii* is less reliable. The Lily of *Kramerii*, whose bulbs are necessarily small, and seem much more liable than those of the

humbler *Lilium rubellum* to decay, sometimes flowers charmingly for a season in our too humid Scottish climate, and then mysteriously disappears. The place that once knew them, and which they touched with such tender grace and delicate loveliness, knows them no more. They do not even leave any interesting offspring (horticulturally called "offsets") to grow and tower through the stormy hours to perfect glory in the coming years.

To descend for a moment from the emotional heights of poetry to the plains of practical prose, I have a suspicion that manurial stimulants, finding their way, as they sometimes do in my own garden, to the tender bulbs of such Lilies (which are not very partial to ammonia) from the roots of adjoining Rose-trees, whose nature is widely different, are not seldom responsible, not less than our lamentable wet northern winters, for their premature decay. When, on the other hand, the imperial Lily and the queenly Rose, of which the one is majesty and splendour, while the other is ineffable grace and perfect sweetness, can be grown side by side with absolute impunity, the floral combination is memorably fine. "The Garden that I Love" (I do not mean that of Mr. Alfred Austin, which I have not yet seen), has many such nobly artistic effects.

Not many of our grandest Lilies, most fortunately for their cultivators, are so evanescent as *Lilium Kramerii*. Even *Lilium auratum*, though its bulbs are supposed to be of a somewhat unreliable character, has grown and blossomed in the places in my sheltered garden in which it was originally planted, for seven or eight years, without deterioration. The only variety that has almost invariably proved itself a conspicuous exception is *Lilium auratum*, var. *rubro-vittata*. The remarkable distinctiveness and brilliancy of this Lily, which seems to be somewhat lacking in vitality, makes me regret its deficiency all the more. Other Lilies of a capricious nature which do not seem to take kindly to my garden soil, are *Lilium pardalinum*, for whose absence its derivative, the Lily of Burbank, which resembles it closely, makes adequate amends, though of less imposing height; *Lilium Humboldtii*, which deteriorates after a few years, and the white Martagon, which I never admired very much.

I have, however, abiding consolations in the magnificent growth and annual floral revelations of *auratum*, *longiflorum*, *gigantum*, *Szovitzianum*, *speciosum*, *chaledeonicum*, and the fragrant *Kanadense* *Lilium Washingtonianum*. David R. Williamson, Wigtonshire.

MARKETS.

COVENT GARDEN, SEPTEMBER 19.

(We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our samples. The prices depend upon the quality of the demand, and they may fluctuate, not only from day to day, but often several times in one day.) Ed.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.		s.d. s.d.		s.d. s.d.		
Asparagus Fern,	per bunch	1-0-20		Lily of Valley, p.	doz. bunches	6-0-12-0
Carnations,	per dozen blooms	0-6-1-6		Maidenhair Fern,	doz. bunches	1-0-8-0
Catlyeas, p. doz.	9-0-12-0			Mignonette, per	doz. bunches	1-0-6-0
Eucharis, p. doz.	2-0-3-0			Odontoglossums,	per dozen	2-6-0-0
Gardenias, doz.	0-6-1-6			Roses, Tex. white,	per dozen	1-0-3-0
Lilium Harrisi,	dozen blooms	2-0-4-0		— Catherine	per dozen	1-0-3-0
Lilium martagon	album, p. doz.	1-6-3-0		— Metmel, per	doz.	1-0-3-0
Lilium rubrum,	per dozen	3-0-5-0		Smilax, p. bunch	3-0-5-0	
Lilium longiflorum,	per dozen	2-0-4-0		Tuberosea, per	doz. blooms	0-3-0-6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.			
Adiantums, doz.	6-0-7-0	Ferns, small, per	doz.	4-6-6-0	
Arbutus, var.	per dozen	0-6-2-6	Ficus elastica, ea.	1-0-7-6	
Aspidistras, doz.	18-0-20-0	Foliage plants,	various, each	1-0-5-0	
— speciosum, ea.	5-0-10-6	Lily of Valley, ea.	1-9-3-0		
Canas, per doz.	18-0-0	Lycodendrons, p.	doz.	3-0-4-6	
Crotoms, per doz.	18-0-30-0	Marguerites, per	dozen	8-0-12-0	
Cyclamen, p. doz.	8-0-10-0	Myrtles, per doz.	6-0-9-0		
Dracaenas, per	dozen	12-0-36-0	Palm, var. each	1-0-15-0	
— viridis, doz.	9-0-18-0	Palms, ea.	21-0-6-0		
Ericas, var., doz.	12-0-36-0	Pelargoniums,	per doz.	8-0-12-0	
Euonymus, var.,	per dozen	6-0-18-0	— scarlet, doz.	8-0-12-0	
Evogreens, var.,	per dozen	4-0-18-0	— crystal, per	dozen	8-0-10-0
Ferns, in variety,	per dozen	4-0-18-0	Spiraeas, per doz.	6-0-12-0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.	
Apples, home-grown, Suffolk, Keswick, Warner, King, Manx, &c., per sieve	1-6-2-3	Greenpeas, per sieve	2-0-1-0
— Quarrenden, per lb.	3-0-4-0	Lenons, Naples, per case	11-0-16-0
— Worcester Pearmain, sive	2-6-1-0	Melons, each	0-9-1-6
Bananas, small, loose, p. doz.	1-0-1-6	— Valencia, case	5-6-7-0
Blackberries, per peck of 12 lb.	1-3-1-6	— Rock, per doz.	1-0-3-0
Cobnuts, Kentish, per lb.	0-7-1-0	Nectarines, A., per dozen	5-0-12-0
Figs, per dozen	0-8-1-0	— B., per dozen	10-0-3-0
Grapes, Muscats, home-grown, per lb. A.	2-6-3-0	Oranges, case, 120	15-0-17-0
— do, B., per lb.	0-8-1-0	Peaches, A., per dozen	10-0-15-0
— Albicante, lb.	0-7-1-0	— B., per dozen	1-0-3-0
— Gros Colmar, per lb.	0-9-1-3	Pears, Williams, Duchesse, &c., in crates	2-6-8-6
— Gros Maroc, per lb.	1-0-1-3	— Eng. Hazel, Bergamot, Wilbur, &c., per bushel	3-0-4-0
— Hamburg, per lb. A.	1-6-1-9	Pines, each	2-0-1-0
— B., per lb.	0-4-0-8	Plums, various, per sieve	0-9-2-0
Belgian, blk., per lb.	0-1-0-8	— washed, 100 lb.	1-1-11
		— Prunes, per bushel	1-9-2-0
		— Victorias, per sieve	1-6-1-9
		Walnuts, per peck	3-0-5-6
		— w. bushel	3-0-0-0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s.d. s.d.		s.d. s.d.	
Artichokes, Globe, per dozen	2-0-3-0	Mushrooms, out-door, per lb.	0-23-0-32
Asparagus, doz.	1-6-0-0	Onions, cases	3-0-4-0
Beans, home-dwl., per sieve	1-3-1-6	— bunches, per dozen	1-6-2-0
— runners, per bushel	1-0-2-0	peppers, bags	2-6-3-0
Beetroots, new, per bushel	1-6-2-0	Parley, per doz.	1-0-1-6
— Cabots, fall, per dozen	0-9-1-0	— sieve	0-9-0-0
— dozen	0-9-1-0	Peas, p. cwt.	1-0-0-0
Carrots, per doz. bunches	1-0-2-0	Peas, Blue, bushel	3-5-0-0
— washed, bags 3-0	—	— Potatoes, per ton	60-0-0-0
— unwashed, bags 2-0	—	Radishes, p. doz.	1-0-0-0
Caiflowers, doz.	1-0-1-6	Salad, small, punnets, per doz.	1-3-0-0
— English, 12 bunches	1-0-11-0	— nets, per doz.	1-3-0-0
— punnets	1-6-0-0	Shallots, per lb.	0-2-0-0
Cucumbers, doz.	1-0-2-4	Spinach, English, bushels	0-9-1-0
Endive, new French, doz.	1-0-0-0	Tomatoes, Eng. fish, dozen lb.	2-6-3-0
Garlic, per lb.	0-2-0-0	— Channel Is. lands, per lb.	0-13-0-2
Horseshoe, foreign, bunch	1-0-1-3	— French, crates 3-0	—
Leeks, per doz. bunches	1-3-1-6	Turnips, new, p. doz. bunches	2-0-3-0
Lettuce, Cabbage, per dozen	1-0-0-0	— bag	2-6-0-0
— Cos, per score	1-6-2-0	Vegetable Marrows, per doz.	1-0-1-6
Mint, per dozen bunches	1-0-1-6	— in pots	1-0-1-6
Mushrooms, house, per lb.	0-9-0-0	Waterers, per doz. bunches	0-4-0-0

REMARKS.—Canadian Bartlett Pears, in cases of 100, 11-6-0; half cases, 50, 6-6-0; "Grape Pears," per dozen, 1-6-0; English Grapes are now coming in large quantities; largely by tons, and some samples are very fine. Some French Louis Bonne Pears, in crates of 25, 6-0-0; very fine. Vegetable Marrows are plentiful and low in price. Turnips are new. Parsnips are now coming in.

POTATOS.

VARIOUS SORTS, 55s. to 80s. John Bath, 33 & 34, Wellington Street, Covent Garden.

FRUITS AND VEGETABLES.

GLASGOW, September 18.—The following are the averages of the prices recorded since our last report:—Apples, English, 11s. to 14s. per cwt.; ditto, large, 18s. to 25s. per cwt.; American, 18s. to 19s. per barrel; Bananas, doz.; American, 12s. to 12s. per crate; Pears, Havre Williams, 4s. to 6s. per case; Duchesse, 3s. to 5s. doz.; Louise Bonne, 2s. to 2s. 6d. doz.; Plums, English Victorias, 1s. to 1s. 6d. per half-sieve; Irish, 1s. 6d. to 2s. per cwt.; Irish English Damascenes, 7s. to 8s. per cwt.; Peaches, home, 2s. 6d. to 5s. Damsons, 6s. 6d. to 7s. 6d. per cwt.; Peaches, home, 2s. to 2s. 6d. doz.; Grapes, 1s. to 1s. 6d. per lb.; Guernsey, 6d. to 11d. doz.; Muscats, 1s. to 1s. 6d. doz.; Guernsey, 6d. to 8d. doz.; Alueira, 1s. to 1s. per barrel; Lenons,

Naples, 8s. to 15s. per case. Melons, Valencia, 2s. 6d. to 3s. do. Cucumbers, 1s. to 1s. per dozen. Tomatoes, English and Germany, 2s. to 3s. per lb.; do. Scotch, 3s. to 4s. do.; Mushrooms, 4s. to 1s. per lb.; Onions, Valencia, 3s. 6d. to 5s. per case.

LIVEPOOL: Sept. 18.—Hort. Society Vegetable Market.—Potatoes, per cwt.: Upto Date, 2s. to 2s. 3d.; Grants, 2s. 1d. to 2s. 2d.; Main Crop, 3s. 6d. to 4s. 6d.; Bruce, 2s. 6d. to 2s. 8d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 6d. to 1s. 9d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, English, 3s. to 3s. 6s. per cwt.; do. foreign, 3s. 6d. to 4s. do.; Parsley, 6d. to 8d. per dozen bunches; Cucumbers, 1s. 3d. to 2s. 6d. per dozen; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 8d. to 1s. do.; Celery, 2s. to 2s. 4d. do.; St. John's Potatoes, 1s. 2d. per peck; Grapes, English, 1s. to 3s. per lb.; do. foreign, 1s. to 4s. do.; Pineapples, 3s. each; Apples, 1s. to 4s. per lb.; Pears, 4s. to 6s. do.; Tomatoes, 1s. 6d. to 2s. do.; Parsnips, 1s. do.; Cucumbers, 6d. to 1s. each; Mushrooms, 4s. per lb.; Broccoli, 1s. do.; Potatoes, 2s. to 3s. per peck; Chumbers, 2d. to 4s. each; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do. foreign, 4d. to 1s. do.; Mushrooms, 6d. to 8d. do.

CORN.

AVERAGE PRICES OF British Corn per imperial qr., for the week ending Sept. 14, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return.—

Table with columns: Description, 1899, 1901, Difference. Rows include Wheat, Barley, and Oats.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's gardens at Chiswick, London, for the period September 20 to September 21, 1901. Height above sea level 24 feet.

Meteorological data table with columns: Day, Direction of Wind, Temp. of Air, Temp. of Soil, Rainfall, etc.

Remarks.—With the exception of a few showers on the 20th and 21st, the weather during the week has been dry and very dull.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands for the week ending Sept. 14, is furnished from the Meteorological Office.

The weather during this period was mainly of a cloudy and an unsettled type. Rain fell almost daily in parts of Ireland and Scotland, but over the Kingdom generally it was chiefly confined to the earlier part of the week. Thunderstorms were experienced over the east of England in some places on Tuesday, and in others on Wednesday.

The temperature was above the mean in all districts, as well as in Scotland. The highest of the day at an inland station was 74° in the S.W. on 17th, when the thermometer rose to 78° in England, S.W., London, to 77° in England, E. and the Midland counties, and to 75° at

some in nearly all other districts. The lowest of the day was registered about the middle or latter half of the week, they ranged from 38° in Ireland, S.W. to 42° in England, E. and to 53° in the Channel Islands. The night was less than the mean in all districts, excepting England, S.W., where there was a slight excess. The large fall at Portland Bill at the end of the week was very local, and probably of a thunderstorm nature.

The bright sunshine was less than the mean over the entire Kingdom, and in most places the deficiency was rather large. The percentage of the possible duration ranged from 41 in the Channel Islands, 43 in England, N.E., and 43 in E. and S.E., to 22 in the Midland Counties, and 17 in Ireland, S.W.

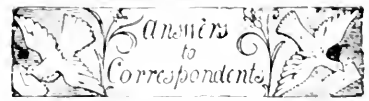
THE WEATHER IN WEST HERTS.

The temperature during the week has been above the whole about seasonable, the only exception being the night of the 13th, when the exposed thermometer fell to within a degree of a freezing point, which is the lowest reading as yet recorded here this autumn. The soil temperature at a feet deep still continues rather warm for the time of year, while at 1 foot deep is, if anything, rather below the September average than otherwise. On 17th, nearly 1 inch of rain was deposited, making this the heaviest fall recorded here in any one day in 1899, and in two months. Previous to this fall no rain had fallen, and only a few drops came through the bare soil in a rain gauge for nearly a fortnight, but since that time the rain gauge has passed through it, and the sun shone on an average during the week for 17 1/2 hours a day, which is nearly two hours less than the average for the month. The atmosphere has been similarly calm, the mean rate of movement being only about two miles an hour. The average moisture in the air has been somewhat in excess of the average, and in the early morning hours of the 17th the first fog of the season was recorded. F. M. H. (Sept. 18, 1901, Sept. 21, 1901).

ENQUIRY.

LARCH SHOOTS BARKED.—A correspondent some time since sent us strips of bark about 1/2 inch long by 1 inch broad, taken from young larch-trees of a height of 20 to 30 feet. The oblong strips were very regular in size and form, and were taken from about 4 to 5 feet from the top of the tree. It has been suggested that these strips were peeled off for nest-building purposes by nuthatches. It has since been ascertained that squirrels were the real culprits, &c.

COAST SITES FOR ESTABLISHING A MARKET GARDEN.—Will "W. R. L." kindly furnish his name and address to the Editor of the Gardeners' Chronicle, as he has a letter for him.



ARTHOGRIS: H. R. They need a warm soil, obtained by putting good drainage beneath them, abundance of manure, and plenty of water, to make them grow rapidly. The stringiness of which you complain will thus be obviated.

BOOKS: Hy. Hedgeson. For suitable books on the subject enquired about, see our last issue, under "Notices to Correspondents." We do not know the prices. F. G. G. English Flower Garden, by W. Robinson, London; John Murray, Albemarle Street, Piccadilly;—G. R. M. Webster's Practical Forestry: Rider & Son, Bartholomew Close, London, E.C.; or for a more exhaustive treatise, Schlich's Manual of Forestry, in four volumes; Bradbury, Agnew & Co., Bouvierie Street.

CHRYSANTHEMUM SHOOTS INHIBITED: Young Gardeners. Caused by earwigs or weevils. Set traps, and examine the plants at night.

COUSIN SENT IN A PARCEL POST BOX: Sospita gigantea (Wellington).

CORRECTIONS. We were misinformed as to the name of the Lecturer on the Cactus

Dahlia at the last meeting of the Royal Horticultural Society. The lecturer was Mr. C. G. Wyatt, head of the well-known firm of Keynes, Williams & Co., of Salisbury—not Mr. Humphries as printed. The firm raise every year 40,000 seedlings, from which the selection of meritorious variations is made. In one year no fewer than 80,000 seedlings were so raised.—In a communication relating to Boussingaultia baseloides, the name of the writer was misprinted Ireland instead of Jolland, and the name of the place should have been Lota Beg—not Fota.—We notice on p. 201 of this week's Gardeners' Chronicle, that our Rose Waltham Climber No. 3 is stated by your correspondent to be a single Rose, and to have the defect of only blooming once. We beg to say that this is not correct, the Rose in question being a full flower of the Climbing Tea section, and a good autumnal bloomer, as will be seen from the accompanying specimens. Wm. Paul & Son.

CYPERIUM BELLETTI, M. C. NIVELA, AND C. CONCOLOR: Veritas. A tropical temperature, much humidity, and plenty of water at the roots at all seasons, are conditions that suit these species. Soil, a turfy loam, and peat, in equal parts, with nodules of limestone intermixed, and grow them in pots, provided with perfect drainage.

DAHLIA, A YELLOW SPORT: J. M. E. Worth cultivating probably, but it has no superlative merit.

DAHLIA SEEDLINGS: A. Bennett. We think, like you, that owing to their extraordinary build and rich colour, they are deserving of distinctive names. We know of none just resembling other.

FERRY RINGS IN PINE: LAMUS AND F. B. Dressings of gas-lime would destroy it, but the grass would be destroyed at the same time, if the lime is applied in sufficient strength to kill the mycelium (spawm) in the soil. The soil inside of the rings has been exhausted of its nitrogenous constituent, and will grow no more Mushrooms or other fungus, and the herbage will be very sparse or non-existent, so that these parts may be heavily manured and dug, and when settled they should be sown with grass-seeds, or turfed forthwith. The land for 2 feet in width and 1 foot deep beyond this year's ring of fungus, and the ring itself, may be dressed with gas-lime, or dug out and wheeled away to the kitchen garden, and fresh soil put in its place. Any chemical manure, if used in sufficient quantity, would kill the fungus.

FERTILE, PLANTED-OFF VINES: G. S. Unless the Vines have already furnished a crop of Grapes for one or two years, the experiment is scarcely likely to succeed. You will do better to obtain a crop of fruit from pot Vines, and to plant young Vines on the bank wall and wait two or three years for them to bear fruit. You could plant just before the fall of the leaf, or after growth has begun in the spring. It is a good method in spring planting to spread out the roots on boards containing 1 square feet, covering them with rich loamy soil, starting them into growth in March, and planting them in late April or May. By making the holes in the border sufficiently large, the mass of soil and roots can be readily pushed off the boards with scarcely any disturbance or check.

FISHES: H. D. W. The labels have become detached on the journey, so that the specimens cannot be determined.

FISHES ON BARKED: W. Hill. Sprinkling the fungus flowers of tan immediately it is observed, with flowers of sulphur, salt or boiling brine, will destroy it.

GARDENING ATTENDANCE: W. J. B. We have had the pleasure of paying over to the Secretary of the Royal Gardeners' Orphan Fund the postal order for 2s. 6d., kindly sent in payment of the insertion.

GRAPES BY PARCEL POST: H. C. Sending that a package sent by post gets no special care

From the *employés* of the Post Office, the packing must be of a nature to withstand rough usage. When sent by rail, and the contents of the package are stated on the label, better treatment is assured. For sending by post, light wooden or stiff cardboard boxes, holding 6 to 8 lb., are the best. These should be lined with wadding or the softest of woodland moss, and over this should be placed tissue-paper, and the box be filled compactly with the bunches, without using any other packing materials. It is advisable to secure each bunch, with which the sides are lined, with ties in two places, attaching these to the sides of the box. If sent in baskets, these should be similarly lined with wadding or moss, and covered with paper, and the bunches should be attached to the sides point downwards, the middle being left free. A piece of tissue-paper should be laid over the fruit before putting on the lid. If the bunches are cut with a piece of the shoot attached, they can be more securely fastened to the sides of a box or basket than when the stalks of the bunches only are taken.

GUN LICENCE: *R. R.* No; none is required to carry a gun on private premises.

KILOGRAMME: *Young Gardener.* One kilogramme contains 1,000 grammes, and is equal to about 2 lb. 3 oz.; 100 kilos are equivalent to 220 lb.

MAVILLARIA ELONGATA: *Notice.* An easily grown plant, with ribbed pseudo-bulbs, and large plaited leaves. It may be grown under the same conditions as *Odontoglossum crispum*, but the temperature should not fall below 50°. It requires a good deal of fresh air admitted to the house, and to be exposed to the fullest subdued light, and not to direct sunshine. Your plant will do better in a pot than on a wood block, and will thrive in chopped sphagnum and turfy-peat in equal parts, sand, and small crocks a few. The pot should cry on the side of smallness rather than be too large. During the season of growth the plant needs a liberal supply of water. The plant being unhealthy should be shaken out of the compost, the decaying parts cut clean away, and the entire plant washed in warm water. Do not divide it until it is much stronger than at present. The drainage should be very good, and the plant be set on a moderately high mound, covering the latter with sphagnum.

NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTICE: We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such demands generally involve some inconvenience, and a large expenditure both of time and money on our part. Correspondents not answered in this issue are requested to be so good as to consult the following number.

NAMES OF PLANTS: *A. G., Dartford.* *Crimm* Moorei and *Epidendrum radiatum*.—*T. R., Weybridge.* *Musa lobata*.—*F. M.* The orange-red berries are those of *Euonymus europæus* (Spindle-wood); the berries (seeds) are now ripe. The other subject is *Pyrus Aria*. The moth next week.—*W. H.* 1, *Helianthus multiflorus*, double-flowered variety; 2, *H. maximus*; 3, *Spiræa ulmaria*, double-flowered variety; 4, *Achillea ptarmica*, double-flowered variety; 5, *Anemone japonica*; 6, *Helianthus decapetalus*.—*G. M.* It is a pleasure to name specimens for you; the specimens are excellent, and clearly labelled, but you send more than six. We are obliged to defer some till next week: 1, *Cryptomeria japonica*; 2, *Cupressus Lawsoniana*; 3, *Thuja orientalis* var.; 4, *Cupressus (Retinospora) pisifera*; 5, *Cupressus*, next week; 6, *Pinus*, next week; 7, *Juniperus*, next week; 8, *Cupressus*, next week; 9, *Picea orientalis*; 10, *Sequoia gigantea* (Wellingtonia); 11, *Cupressus nootkatensis*; 12, *Cryptomeria japonica*; 13, *Cupressus nootkatensis*.—*Constant Reader.* 1, a *Cupressus*, perhaps *C. torulosa*; 2, *Retinospora plumosa* of gar-

dens; 3, *R. p. arifera*; 1, *Cupressus Lawsoniana*; 5, a Cedar, we cannot tell which; 6, *Retinospora pisifera* of gardens.—*Hughes.* 1, *Yononka subsessilis*; 2, *Rudbeckia speciosa*; 3, *Yononka spicata* var. *carnea*; 4, *Physellus capensis*; 5, *Donnicum* sp.—*A. C.* 1, *Vinea rosea*; 2, too far gone for determination; 3, *Anthemistifloria*.—*Gardener.* *Euonymus europæus*.—*F. E. A.* 1, *Adiantum capillarium*; 2, *Adiantum decorum*; 3 and 6, *Adiantum cucullatum*; 5, *Adiantum capillare-venosum*.—*W. G.* *Datura Stramonium*.—*R. A.* *Centradenia rosea*, and *Eaccharis subdentata*, often called *Caliphouria subdentata*.—*F. G. G.* 1, *Saponaria officinalis*, double. —*C. E.* 1, *Tiarella cordifolia*.—*Ipsomarus.* *Fanckia grandiflora*.—*W. H. B.* *Hibiscus syriacus*, the *Althea frutex* of gardens.

NAMES OF FRUITS: *T. R.* Winter Quoining.—*A. M.* The conical fruit is Grey Leadington, the other Winter Hawthorn.—*H. Hughes.* Apple Ecklinville Seedling. The *Sclaginella* enclosed therewith is *S. Wildenovi*.—*Devon.* Double-flowered Pomegranate; yellow Plum, *Demission's Superb*; blue ditto, *Prince of Wales*. Leaved shoots should always be sent with Plums for naming.—*T. S., Ayrshire.* Grape Royal Muscadine, a good out-of-doors variety, but the sample sent was much past its best; Peach *Grosse Mignonne*, much undersized.—*J. H. L.* 1, *Schoolmaster*; 2, *Dominio*; 3, *Cox's Orange Pippin*; 4, *Duchess of Oldenburg*.—*A. L. S.* 1, *Passo Pomme Rouge*; 2, *Warner's King*; 3, *Early Julien*; 4, *Pear Baple Nebis*; 5, *Pear*, quite rotten; 6, *Oslin*.—*C. A. C.* 1, *Parry's Pearmain*; 2, *Carlisle Codlin*.—*Constant Reader.* Leaves or small shoots should be sent with Plums as an aid to the determination of their names. The fruits received were over-ripe, and the paper with the labels was reduced to pulp. 1, *Mitchelson's*; 2, *Dunmore*; 3, *Dunburgh*; 4, *Diamond*.—*J. C.* *White Pedrigon*. Yes, it has been esteemed both for preserving in a fresh state and for drying.

NETARINES: *G. C.* Most excellent flavour, and of fine size. To have secured crops of this fruit and Peaches every year for 28 years is a record not easily to be matched. Can you tell your less fortunate brethren of the craft how it is done.

OUTGROWTH FROM ROOTS OF CHELIDONIUM: *B. A. S.* The swelling and production of numerous adventitious shoots from your plant are due to the irritation set up by ants. *G. M.*

PEARS: *H. B.* Your fruits are affected with a fungus, *Fusicladium dendriticum*. Destroy by fire all affected leaves and fruits as far as you can. Early next spring, spray your trees with sulphide of potassium, $\frac{1}{2}$ oz. to a gallon of water.—*J. U.* The branches are dead, and the fruits shrivelled and arrested in growth. We can see neither fungus nor insect, and without knowing the circumstances we can give you no fuller information.

PYRUS MALUS FLORIBUNDA: *Untruelled.* The tree meant is probably *P. Boribunda*, a free-flowering Crab with deep rose-red flowers, and long stalked, very small, nearly spherical fruits. It is one of the most ornamental of hardy shrubs. In good soils and sheltered spots it may reach a height of 20 feet. It is a native of Japan, and hardy in this country. It blooms in late spring like our Apples.

SIX DARK-COLOURED ROSES: *Roses.* *Prince Camille de Rohan*, Emperor of Morocco, Duke of Comnaght, Pierre Notting, Xavier Obbo, Sultan of Zanzibar.

SPECIMEN No. 3: *Willis.* *Quercus* sp. Without fruit it is found impossible to name this.

SUPPLERING A ROSE-HOSE: *Tea Rose.* Such radical remedies are extremely risky, as you seem to have discovered to your cost. We should suppose that no more harm will occur than the loss of the leaves and the softer portions of the shoots. But without an inspection of the plants it is impossible for us to say whether much or little damage is done.

TILANDSIA MASSANGIANA: *Veritas.* The conditions prevailing in an ordinary plant-stove are suitable. It is semi-epiphytal, and the mixture it is grown in should be light and porous. Spongy turfy loam, peat, and half-decayed leaf-soil, charcoal, decayed wood, sand, and a good mass of crocks as drainage.

TIN-BOX: *E. D., Gainsboro.* It is not possible for us to know at this time of day which box belonged to you.

TOMATOES DISEASED: *H. W., Irbath.* The black spot fungus, for which no cure is known. Remove every affected fruit and destroy it. Next season, dress the plants with sulphide of potassium, $\frac{1}{2}$ oz. in 1 gallon of water, several times before the fruits change colour.

VINE ROOTS DESTROYED: *W. Sherwin.* The work of weevil grubs or wireworms. Has not the soil become sour, close and impervious to the air? The appearance of the roots pointing to these conditions of the soil being also contributory causes.

VOLEES: *Alpha.* We have examined the flowers, but can detect no insect. If you watch carefully you will probably find the culprit.

WILLOWS: *Alpha.* You may plant them now with advantage, and continue to do so throughout October, or even later.

ZYGOPETALUM MACKAYI: *Notice.* When at rest a temperature of 55° to 60° F. suffices—that is, in the winter season. When making its growth 70° to 75° is not too much. When in flower it will not harm the plant to afford it 60° to 65°. Shallow pans with opening in the side are better than pots; using plenty of crocks at the bottom, and a mixture of turfy peat, sphagnum-moss, sand, and finely-broken crocks in which to grow, and as it requires plenty of water when growing, the drainage must be good. Stove treatment causes spotting of the leaves.

COMMUNICATIONS RECEIVED.—John Chubbery, much obliged by report, but not available in full.—*H. R.*—*R. P. R. S.*—*G. M. C. T.*—*W. H. D. R. S.*—*A. E. O'N.*—*E. M. W. M. L. B. & Co.*, Japan.—*G. R. W.*—*D. P. P.*, Montreal.—*R. M.*—*Barr* Sons.—*H. R.*—*F. W.*—*W. Gibson*—*Simpson & Sons*.—*J. R. Ball*.—*A. S. R. & Sons*.—*R. C. T.*—*Gardener*.—*E. S.*—*A. D.*—*E. M.*—*S. Margerson*.—*R. S.*—*T. M.*—*H. W.*—*G. G.*—*C. Garrett*.—*F. E. M.*—*G. G.*—*Aurient*.—*E. C.*—*A. G. G.*—*D. A. B.*—*Elliot Stock*.—*J. L. J.*—*R. P. & Sons*.—*H. S. L.*—*D. M.*—*D. P. P.*

CATALOGUES RECEIVED.

BULBS AND ROOTS.

ARHATHS BROS., Ltd., Nottingham.
CROSBY & SWALE, The Anglo-Dutch, Holland.
THOS. S. WADE, Ltd., Hale Farm Nurseries, Feltham, Middlesex.

LEONARD J. CHING, Crescent Nurseries, Forty Hill, London, N.
BEN REID & Co., Ltd., 115, Union Street, Aberdeen.
MR. PEERY, Hardy Plant Farm, Winchmore Hill, London, N.
JAMES COCKER & SONS, 130, Union Street, Aberdeen.

PLANTS AND SEEDS.

JAMES CRAVEN & Co., 2, Moines Street, Wellington, N.Z.
VICTORIN ANDRÉAS & Cie., 1, quai de la Mégisserie, Paris.—Fruit-seeds of all kinds.
CHE. LORENZ, Seed Grower, Erlurt—Vegetable and Floral Novelties.

MR. JOHN CHARLTON, 35 & 37, Panfles, Tunbridge Wells—147 Hardy Perennials, Rockery, and Spring Bedding Plants, &c.

H. HENKEL, Darmstadt.—Fruit-trees, Conifers, Perennial Herbaceous Plants, Flowering and Foliage Plants.

MESSES. CLIBRAN, Oldfield Nurseries, Atrincham; and 10-12, Market Street, Manchester.—Carnations, Pinks, Pansies, Violas, &c.

W. H. HINDS, High Road, Chiswick, London, W.—Freshly Imported Palm Seeds.

M. LOUIS FALLEPÉ, Vallée de Chateaux, Chateaux (Seine)—Tree and Herbaceous Perennials, Lilies for forcing, Roses, &c. of the Valley. Trade list.

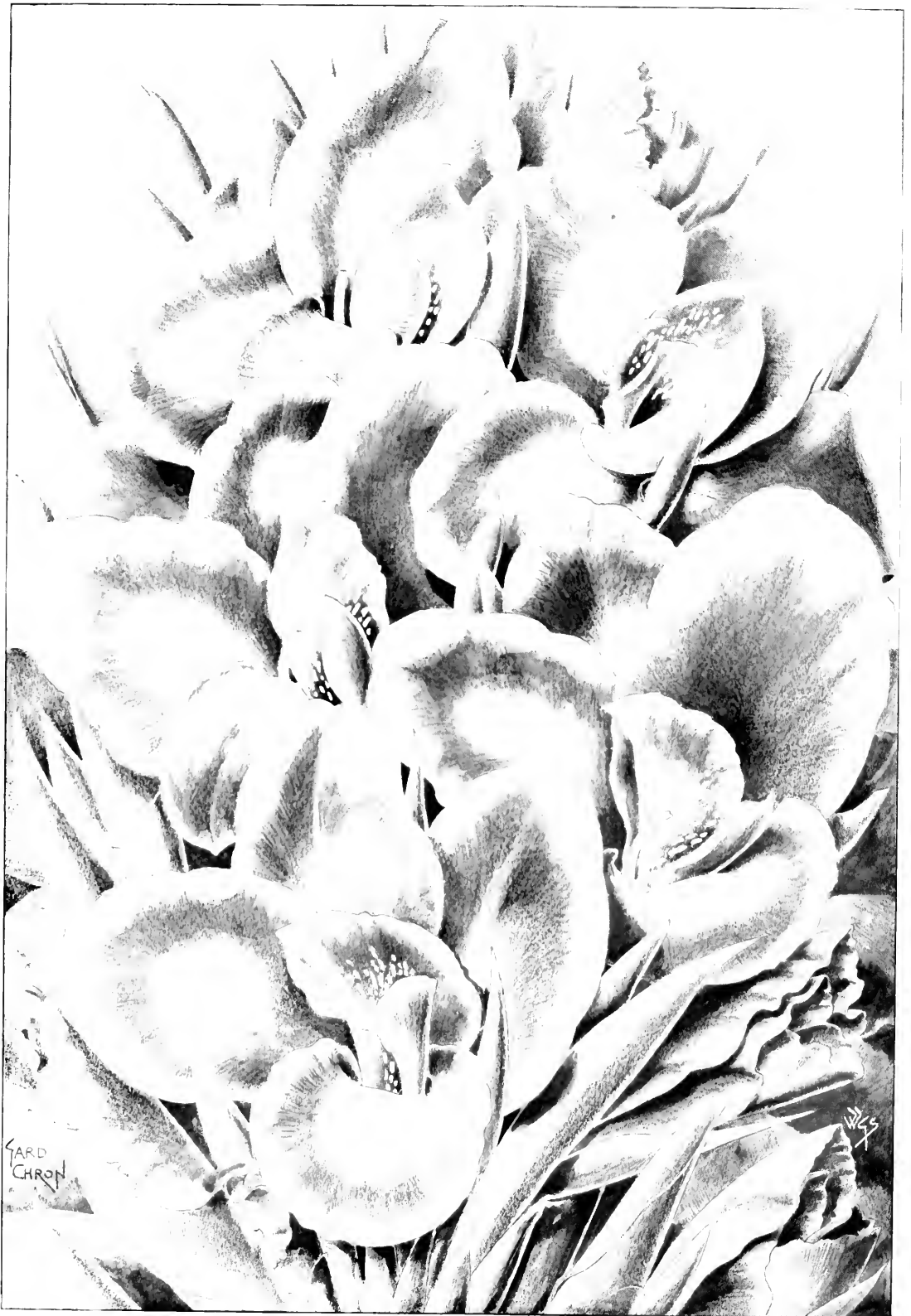
GUTHRIE HARRY PLANT NURSERY, Millhead, Guildford—select Herbaceous, Alpine, and other Hardy Garden Plants.

SOTHERY & NOTTING, Rose Growers, Grand Duchy of Luxembourg—Roses for forcing, and general Rose Catalogue, Novelties, &c.

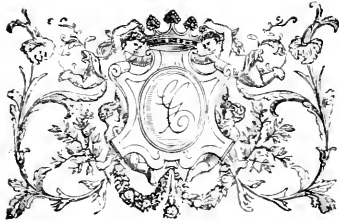
MR. PAUL & SON, Wallham Cross, Herts.—Roses.
WINDHURST NURSERY CO., Puchers, Moorle County, North Carolina, U.S.A.—Wholesale Prices for Woody and Herbaceous Perennials, American seeds, Trees and Shrubs, &c. Otto Katzenstein, Grauberg.

WILHELM PLETZER, Florist and Nurseryman, Militär Strasse, Stuttgart—Roses, Bulbs, Hardy Plants, Small Plants, &c.

R. H. BARR, Ltd., The Floral Farms, Wisbech—Bulbs, Roses, Perennials, Clematis, Fruit Trees, Seeds, &c.



CANNA "KALE GRAY" - "GLOUBE" - "EIGHT ORANGE"



THE
Gardeners' Chronicle

No. 770.—SATURDAY, SEPT. 28, 1901.

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**A VISIT TO THE NORTH—I.
THE FIRST HALT.**

A FEW weeks ago, I was deputised by the Editor to represent this journal at the two horticultural exhibitions recently held in the grounds of the Glasgow International Exhibition. This afforded me a welcome opportunity of visiting several gardens and nurseries, concerning which a few details may be of interest to readers who have little knowledge of Scotch gardens, or who possessing such knowledge are prevented from seeing them frequently.

Instead of proceeding to Scotland direct, however, I left London by the west coast route, and halted in Staffordshire, in order to fulfil a promise to visit Messrs. Webb & Son's establishment.

The seed-warehouses, offices, glass-houses, &c., are at Wordley, half-an-hour's drive or so from Stourbridge Junction Railway Station. The buildings, including those for the storage of Hops and wool, are very extensive, and additions have been made to them since my last visit. There is every convenience necessary for conducting a very

large seed business, with separate departments for agricultural and horticultural seeds.

The glass-houses contained groups of Gloxinias, tuberous-rooted Begonias, and other greenhouse flowering plants that are propagated by seeds; whilst in one of them were plants of a new variety of Tomato with large, oval-shaped fruits, which is expected to prove valuable, and is uncommonly free cropping. As no name had been given, there is no need for further reference to the variety, until it has been given a longer time to show whether or not its qualities are superior to the many excellent Tomatos there are now upon the market.

From Wordley to Kinver Edge, where the trial-grounds are situated, it is a further distance of some miles about thirty minutes' run for a good horse. Since my last visit to the place a light-railway has been completed from Stourbridge to Kinver, and thousands of persons from the monotonous "Black Country" seek relaxation during the summer months in frequent trips there.

There are probably no trial-grounds in Britain situate in a more picturesque locality than Kinver, which is some compensation for its comparative inaccessibility. After alighting at the old-fashioned farmhouse, one soon discovers that the greater part of Kinver Farm is given up to the growth of grain crops for seed purposes. The harvest was being finished when I was there, and Mr. Chas. Webb, a son of Mr. Ed. Webb, who takes much interest in this part of the business, appeared to be very satisfied with the present season's yield, which compared favourably with the disappointingly small crops in some districts, where the effects of the drought have been more serious.

We are less concerned with the agricultural seed trials than with those of seeds for the garden; but as Messrs. Webb have long made a speciality of them, it may be stated here that during the present season there have been sixty trials of Mangolds, the best of which is said to be New Smithfield Yellow Globe; eighty-nine trials of Swedes and Turnips; eighty-seven trials of Wheat, of which Mont Blanc White and Standard Red are specially recommended; and forty-three trials of Barley, including a new variety said to combine the qualities of the well-known Kinver Chevalier and Burton Malting. Of Oats there have been eighteen plots this season, representing selections from a hundred trials made in 1900.

One of the principal trials in the garden-seed department has been that of Peas, which included as many as 158 samples. A seedling variety was pointed out to me, which is the result of a cross between Sutton's Perfection and an unnamed seedling. The new one is a blue wrinkled marrowfat Pea, with very large pods and seeds. Though just its best when these notes were taken, it appeared to have the qualities of a first-class marrowfat Pea. The height of haulm was about 3 feet, and there were often ten peas in a pod.

That excellent summer Cabbage, Webb's Emperor, was represented by a large brake of plants, that had been cut down for seedling next year. Of Cabbages and Savoys the number of trials was forty-two, exclusive of forty-seven of Broccoli, and twenty-four of Cauliflowers.

There were 100 different sorts of Potatoes; also trials of Onions, Beet, Carrots, Lettices, Beans, and other vegetables. Among the Beans were noticed two varieties with rich yellow coloured pods, Golden King, a tall growing sort; and Golden Queen, dwarf. Though seldom cultivated in gardens, and hardly ever exposed in our markets, this type of Bean is very delicious when obtained in the best condition.

Turning to the trials of strains of flower-seeds, there was a large breadth of Sweet Peas, representing eighty-seven varieties; Asters (China), fifty-two trials, including Snowflake, with large white flowers of the Comet type; White Queen, a good dwarf bedding Aster; Scarlet King, Lilac Gem, a rather tall grower; Cardinal, bright crimson, extra good colour, and various mixtures of Asters of different heights. Gaillardias, the best of which is Eclipse; Dianthus, of which Glowworm was remarked, with large flowers of rich colour; and a great variety of the best border Carnations were making a fine display, and the pretty Marguerite-Carnations were a show of bloom. Of East Lothian Stocks, the best strain is known as May Queen, and can be procured in four colours, white, crimson, scarlet, and purple. Of the old-fashioned Candytuft there were fifteen trials, the best varieties being Snowflake and Pink Pearl. Godetias, as represented by fifteen varieties, were very good, three noteworthy varieties being Pearl, lilac-coloured with rose markings; Fairy, white with pale tint; and Brilliant, colour crimson. Eschscholtzias, Clarkias, Mignonettes, Nasturtiums, Zinnias, Marigolds, Helichrysums, Poppies, and some other kinds of hardy flowers were all to be seen in the trial grounds, most of them in full flower.

Two rows of double-flowered Hollyhocks in these grounds were well worth remark. They were 8 and 9 feet high, in excellent flower, and were so robust that there might never have been such a pest as a Hollyhock-disease. Not a plant had failed, if my memory serves me rightly, and none looked sickly.

Leaving Messrs. Webb & Sons, I reflected on the amount of both care and time expended by our large seedsmen in keeping their stocks as true to type as possible, as well as in seeking for improvement upon existing varieties, and the great businesses that they collectively carry on would not be possible were it not that from England, choice seeds are distributed over the British Colonies, as well as at home.

The next establishment I visited was many miles further north, and the date was nearly a week later. P.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

**ODONTOGLOSSUM LINDELEYANUM
AUREUM.**

ODONTOGLOSSUM Lindleyanum was introduced nearly sixty years ago, and since that time it has frequently come among importations of other species (for its wide range of distribution renders it difficult to get an importation of many of the other species without some O. Lindleyanum). Though not among the showiest, it is interesting by reason of its constancy and its adherence to fixed characters, which constitute it the most clearly defined of any

species of *Odontoglossum*. In the matter of colour suppression, whereby yellow forms are produced, although it has been one of the earliest introduced into gardens, it is one of the last to present the yellow form coveted by the orchidist, for already yellow forms of nearly all the *Odontoglossums* having yellow and brown, or white and brown, as their normal colours, have already been flowered.

At last *O. Lindleyanum aureum* appears with de Barri Crawshaw, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), to eqp. company with the many fine and rare *Odontoglossums* in his collection. The form of the flower, and its narrow segments, is of typical *O. Lindleyanum*, the colour, as in all cases where brown-blotched *Odontoglossums* have produced yellow forms, being in two shades of clear yellow, the lighter as the ground colour, and the darker yellow marking the places where the brown blotching of the normal form would be. The yellow colour also extends over the column and base of the lip, the calli only being white. In normal forms there are usually some purple markings on the side lobes of the lip, but in the variety *aureum* these also are suppressed by the same process as *albino* are evolved amongst *Cattleyas* and some other *Oreohids*. James O'Brien.

WHITEWAY, SOUTH DEVON.

WHITEWAY, the Earl of Morley's seat, near Chudleigh, South Devon, though not comparable to the immense pile of Saltram, the property of the same owner, which stands on a wooded hill in the neighbourhood of Plymouth, is even more interesting from a gardener's point of view, owing to the large collection of choice *Rhododendrons* and other subjects that flourish in its grounds. Situated on a somewhat elevated and well-wooded slope, facing across a beautiful valley, the rugged fens of Dartmoor, some 10 miles distant, it is not exempt from the effects of gales; but, *Rhododendrons* growing rampantly, shelter is easily provided by these efficient wind-screens for shrubs and plants that require such protection.

Rhododendrons being, perhaps, the chief objects of interest in these attractive gardens, may be first briefly touched upon. The gem of the collection is undoubtedly a fine bush of *R. campylocarpum*, believed to be the largest in the country. This specimen stands about 8 feet in height, and has an almost similar diameter, being absolutely covered in the spring with countless trusses of pale yellow flowers, when it presents a charming picture. Close by is another yellow-flowered *Rhododendron*, *R. triflorum*, far inferior in beauty to the first-named. *R. Falconeri*, *R. Aneklandi*, and a beautiful pink-flowered form of the latter, are also present, as are *R. barbatum*, with its deep red blossoms; *R. fulgens*, *R. calophyllum*, *R. campanulatum* Wallichii, *R. nikagiriense*, and the late-blooming *R. cinnabarinum* var. *Blandfordianum*, with its trusses of rather small, soft-red flowers carrying a bloomy sheen on their substantial petals. *R. Combe-Royal* and *R. Luscumbianum*, seedlings raised by the late Mr. Luscombe in the well-known Combe Royal Gardens, near Kingsbridge, are very beautiful, as is *R. Mrs. Butler*; while *R. Brayanum*, *R. Broughtoni*, and *R. Hodgsoni* are also worthy of notice, and such sorts as *Brilliant*, *Standard of Flanders* and *Black Arab* are valuable for their colour, that of the last-named being of a deep maroon, approaching black in the opening buds. Two healthy bushes about 1 foot in height are recent importations from India, but have not flowered as yet. Numerous seedlings have been raised by Mr. J. Nansen, the

head gardener, which include fine hybrids between *R. Aneklandi* and *R. Thompsonii*, *R. ochroleucum*, and *R. glomiferum*, and many others, as well as a collection of hybrids from seed raised in the Pentillie Castle Gardens. One enormous specimen, 20 feet in height, and nearly 70 feet in circumference, was moved

delightful pictures are obtained from different points in the wide wood-paths in the spring days when the numerous species and varieties attain the zenith of their display. *Azaleas* are generally held to be immune from the attacks of rabbits, but in the Whiteway woods this is not found to be the case, and young,

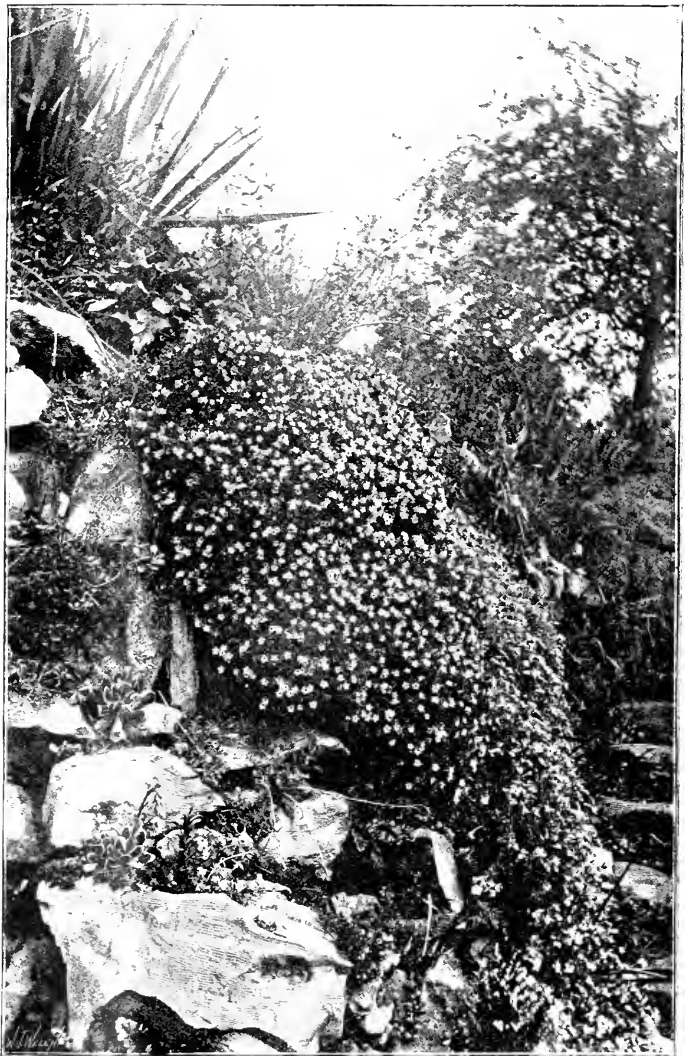


FIG. 70. LITHOSPERMUM PROSTRATUM, AT WHITEWAY: FLOWERS DEEP BLUE. (SEE P. 239.)

a distance of 50 yards some few years back, but its robust health gives no evidence of the shift, the ample foliage touching the grass on all sides. Ghent *Azaleas* are also raised from seed in quantity, some of these having been known to blossom under a year from seed. The neighbouring woods are largely planted with *Rhododendrons* and *Azaleas*, their numbers being added to year by year. Some of the former are over 20 feet in height, and

unprotected plants are often barked and killed. Two fine examples of *Trachycarpus Fortunei* stand in the gardens, from the seed of which many young plants have been raised. A large specimen of *Magnolia conspicua*, about 30 feet in height, is a beautiful feature when covered with its thousands of white blossoms, as is a fine shrub of *Pieris formosa* over 10 feet high. A *Juniper* (*Cercis siliquastrum*), a very large *Prunus Pissardi*,

Eoehorda grandiflora, *Cerasus Watereri*, *Embothrium coccineum*, *Spiræas* in variety, *Cistuses*, and *Abutilon vitifolium*, both white and lavender-flowered forms, are among the most ornamental of the flowering shrubs, while *Pittosporum Mayi*, which has produced its tiny purple-black flowers in prodigal profusion in the south-west this season, has set fruit freely.

Among wall-climbers are *Edwardsia grandiflora*, *Trachelospermum jasminoides*, *Solanum Dulcamara* fol. var., *Bridgesia (Ereilla) spicata*, *Mandevilla suaveolens*, *Tropeolum tricolorum*, and numerous handsome varieties of

epituous bank is draped with *Clematis montana*. *Lithospermum prostratum* forms a dense mass of blue-starred growth over some 3 feet of hanging rock (see fig. 70, p. 238), and *Hypericum reptans* covers a considerably larger space; while the charming *H. coris* also does well. Specimens of *Daphne Cheorum* are in the best of health, and annually produce their clusters of fragrant coral-red flowers in abundance; while *Saxifragas* in variety, among which *S. pyramidalis* and *S. valdensis* are prominent, *Onosma tauricum*, *Hippocrepis comosa*, *Pentstemon alpinum*, *Erigeron mueronatus*, *Geum varie-*

tanum grow, and freely reproduce themselves from seed.

At a lower level Bamboos flourish, *Rodgersia podophylla* perfects its handsome leaves and white spikes of inflorescence, and *Oreocoma Candollei* lifts its graceful foliage; while hard by *Mertensia virginica*, *Trillium grandiflorum*, and *Dentaria digitata* grow strongly; and the lovely *Atragene alpina* wreathes a rough Fir-stump with its pale-blue, white-centred blossoms, whose narrow petals drooping round the corolla gives the flowers a distinct and delicate appearance. An enormous bush of *Paeonia Moutan* stands on the open lawn, and measures 15 yards in circumference, its height being 6 feet. Many fine single Tree Peonies are grown, and have made rapid progress since being planted; and the beautiful single white herbaceous species, *P. Emodi*, is represented by several plants. *Gaultheria Shallon* has formed a spreading mass many feet in diameter; and a colony of *Lenten Roses* from Mr. Archer Hind's garden are thickly set with flowers in the early spring. Carnations are well grown, and the herbaceous borders, of which there are several, two wide ones running across the kitchen-garden, are filled with handsome hardy plants; *Tulipa Gesneriana* major providing a brilliant colour effect in the late spring. Amongst other plants to be found in the gardens are *Ostrya magnifica*, *Incarvillea Delavayi*, *Cypripedium spectabile*, which grows remarkably strongly; *Lathyrus Sibthorpi*, *Anemones*, *Irises*, and *Ranunculi* in variety, as well as many other species.

In the greenhouse the chief interest centres in the splendid collection of *Disa grandiflora*, which is for the most part grown in shallow boxes 2 feet square, 150 spikes having been thrown up from one box. Many *Disas* are also grown in a cold frame. Besides *D. grandiflora*, *D. Taylori* is also cultivated. A large *Bougainvillea* occupies one end of the house, which contains *Crimms* and numerous fine seedling *Hippeastrums*.

The stove-house is chiefly devoted to *Orchids*, many unnamed varieties lately imported from India giving promise of flower; while at the time of my last visit, a fine specimen of *Dendrobium thyrsiflorum* was in magnificent bloom. In this house *Anthuriums* and *Eucharis Lilies* are also grown, and *Aristolochia elegans* is employed as a climber. S. W. F.

DOUBLE-FLOWERED ARABIS ALPINA.

This showy perennial has come into favour again, and deservedly so. It is so long since it was grown in this country that it was, at its recent re-introduction, treated as a new plant; but we have notes of it dating as far back as 1820, and teratological books contain many references to it. Our illustration (fig. 71) is from a plant in the nurseries of Messrs. R. Veitch & Sons, of Exeter. It is as easy to grow (when the sparrows vouchsafe to let it alone) as the common one, and is highly to be recommended for the rockery.

KEW NOTES.

ORCHIDS AT KEW.—In addition to the well-known showy kinds, there is at present in flower a remarkable collection of rare, curious, and beautiful species, all of which, thanks to the good cultivation bestowed on them, appear now at their best. Among those noted were *Cynorchis purpurascens*, with four fine heads of light purple flowers, rising from large fleshy leaves a foot or more in length; *Habenaria Lugardi*, with white flowers, furnished with long spurs; *H. Kingiana*, a quaint, but



FIG. 71.—DOUBLE-FLOWERED ARABIS ALPINA, IN MESSRS. R. VEITCH AND SONS' NURSERY, EXETER.

the different sections of the large-flowered *Clematis*, which have been raised from seed, *Erythrina cristagalli*, planted outside the stove-house wall, has formed a permanent trunk some 5 feet in height and 18 inches in circumference, from along the whole length of which it breaks annually. As a rule the *Erythrina*, even in the south-west, dies to the ground-level every winter.

The rock garden is formed on one side of a small natural ravine, along the stony base of which a torrent foams during the equinoctial rains. At the head of the ravine, a very large specimen of *Pyrus Malus floribunda* grows, which in the spring spreads wide its rosy canopy; while a little lower down, the pro-

stratum, *Waldenbergia serpyllifolia*, *Linum arborescens*, *Dianthus sanguinea*, *Herniaria glabra*, *Dondia epipactis*, *Veronica*, *Viola cucullata* alba, *Gentiana lutea*, *Bryanthus cuneatifolia*, *Asarum europæum*, and many other plants, are also present.

Beneath the perpendicular rocks on the other side of the ravine numbers of rare Ferns are grown, amongst the more noteworthy of which are *Dayallia novæ zealandiæ*, *Pteris scaberula*, *Adiantum palmatum*, *A. pedatum*, *Polystichum setosum*, *Woodsia hyperborea*, *Aspidium Lonchitis*, *Oncocler sensibilis*, *Lomaria magellanica*, a species of *Osmunda* from North America, and many crested varieties. By the Ferns, *Cyclamen Cymum* and *C. neapolitanum*

less showy species; various *Bulbophyllums*, including the large *B. grandiflorum*; the singular and pretty *Trias disciflora*; *Eulophia Woodfordii*, a large-growing and remarkable species from Old Calabar, with tall, many-flowered inflorescences, the blooms of which have green sepals and petals, and a dull, claret-purple lip; *E. pulchra* and *E. Sanderiana*, *Catasetum Trulla*, *C. limbratum*. *Coryanthes macrantha* is again flowering; it seems quite at home at Kew, and flowers regularly.

Of *Masdevallias*, *Pleurothallis*, and *Restrepia* many are in flower, especially noteworthy being fine tufts of *Pleurothallis picta* and *Restrepia sanguinea*; and a fine specimen of the rose-purple *Sobralia Lowei* was observed; the singular little *Signatostalis radicans*, a new Madagascan *Cynorchis* with flowers hairy on the outer side; *Cynoches chlorochilon*; several *Polystachyas*, including *P. grandiflora*, flowering on a mass as imported, together with *Eulophia scripta* and several other species; *Brassavola encullata*, *Dendrobium bracteosum* and other *Dendrobes*; *Angraecum Chaillunianum*, *A. Scottianum*, and the singular *A. Eichelianum*; *Coccylogne Veitchii*, with pendent racemes of white flowers; several interesting species of *Liparis*; *Oncidium Lucasianum*, closely resembling *O. Jamesoni*; *Odontoglossum retusum*, with orange-red coloured flowers; *Epidendrum oranthum*, *E. inversum*, and a number of other *Epidendrums*, *Pogonia discolor*, with pretty bronzy leaves; a number of the yellow *Spathoglottis Fortunei*; and a fine batch of the beautiful rosy-lilac flowered *Stenoglossis fimbriata* from Natal, with a specimen or two of its white variety; and a good number of *Cypripediums* and other *Orchids*, the different species being drawn from regions very remote from each other, and very different in climate. It is no small feat to grow, flower, and maintain in good condition, subjects representing most of the tropical countries, the culture of the plants even of the same countries being complicated by the different elevations, often unrecorded, at which they are found.

NEPENTHES.

Inspection of the grand collection of Pitcher-plants would make many wish to try their skill on them, although they are generally considered difficult. This was the case at Kew till the present house was arranged for them, the rocky basement being planted with *Marantas*, *Fittionias*, and other ornamental-leaved and trailing plants, not liable to be affected by insects, while the *Nepenthes* were put into baskets suspended from the roof. The house is kept at a comfortably warm temperature, and moist, and the greater part of the plants bear a profusion of pitchers, in some cases too numerous to count.

Nepenthes Rafflesiana, with its large, reddish-brown blotched pitchers, is one of the oldest and still one of the best species; the Bornean *N. bicolorata* with greenish pitchers has very distinct characters; *N. Curtisii*, *N. Northiana*, *N. ampullaria*, *N. distillatoria*, *N. Hookeriana*, *N. Rajah*, and *N. Veitchii* are all remarkably fine, and present curious distinguishing features. Botanically, *Nepenthes Pervillei* (Wardii), a singular, small-growing species from the Seychelles, and *N. ventricosa*, with curious pitchers inflated at the base, and narrowed upwards, and widened at the top like a funnel, are among the most interesting. *N. sanguinea*, with purplish-red pitchers, is the most uniformly coloured of the species, but in point of vigour, size, and beauty, it is excelled by its progeny, the handsome specimens of *N. Mastersiana*, both the red and

the mottled forms of which are in the collection. In an adjoining house, a good specimen of *Dischidia Rafflesiana*, one of the three species of this singular species established at Kew, is bearing a number of pitchers. It is an *Asclepiad*, and in no way related to *Nepenthes*; its pitchers are modified leaves, and not leaf-appendages as in *Nepenthes*. It was illustrated in the *Gardeners' Chronicle*, Sept. 23, 1893, p. 369.

THE FIBRO-VASCULAR BUNDLES OF STEM AND PETIOLES.

In connection with proliferous Tomato-leaves, the *Gardeners' Chronicle* of June 15, 1901, p. 393, states:—"Dr. Bonavia regards the leaf as a modified branch; but the anatomical structure of the petiole is not that of the stem, but of the usual kind in petioles, having a horse-shoe-like section of the fibro-vascular bundles, with two extra cords on either side of the superior groove."

I have now six Tomato plants raised from cuttings of the leaf of this Tomato, each cutting having a growing bud from the axilla of the leaflet. I planted each cutting in a small pot. All six struck, and are now growing into healthy plants, some of which are upwards of 2 feet high. This fact would seem to mean that the vascular bundles of the stem of the usual kind in the Tomato can produce vascular bundles of the usual kind in its leaf, and these again can produce vascular bundles in its leaflet-buds, which are now growing into stems furnished with the usual leaves.

It would appear, therefore, that the anatomical difference between the disposition of the fibro-vascular bundles of the stem, and those of the petiole, is of little or no importance. The one can evolve the other, and *vice versa*. Is it not possible that an exaggerated importance has been given to the disposition of the fibro-vascular bundles of the stem and petiole, when we see that some of those of the stem run through the petiole, and re-produce themselves again in the leaf-stem? With the exercise of a little imagination, and putting aside for the moment the school botanical vocabulary, one might conceive the stem of this Tomato as a huge compound leaf, with its sub-divisions following the rule of its phyllotaxis. In the case of the Fern called *Lygodium*, is it the leaf (frond) or the stem that twines round its support? *E. Bonavia, M.D., Sept. 21, 1901.*

CLEMATIS DAVIDIANA.

ALTHOUGH introduced about 1861 from Northern China by the Abbé David, this pretty and distinct species is seldom seen in British Gardens. At the present time it forms a conspicuous feature, flowering at this season of the year when the majority of the *Clematis* are practically past their best. In habit and style of growth it approaches nearest to that of *Clematis tubulosa*, another Chinese form, and by some authorities it is regarded as simply a form of this latter species. In growth it forms a neat bush, growing from two to four feet in height, sub-shrubby and non-climbing. Its leaves are broad, disposed in three oval-shaped leaflets. The flowers are deep blue, with numerous yellow anthers, tubular, about half-an-inch in length, resembling in shape those of a single *Hycacinth*, produced in clustered heads varying from six to twelve together, disposed generally in the leaf axils. They also possess a very agreeable fragrance. It grows very freely in any good garden soil, and can be readily in-

creased by means of seeds sown in spring, cuttings of the young growths in summer and also by grafting. Until within a few years ago this species does not appear to have been taken in hand by the hybridist, but a continental firm has succeeded in raising several forms; which will, when distributed, probably result in this type and its varieties becoming equally as popular as the older and better-known forms of the *Clematis* genus.

CLEMATIS GRAVEOLENS.

This is another distinct species, which, like the foregoing, is as yet but little known in gardens, introduced from Chinese Tartary in 1841. In growth it forms a vigorous climber, much branched, and of slender appearance; its leaves are pale green in colour, smooth and ovate in shape. The flowers, although solitary, are produced abundantly from August to October, varying in size from three-quarters to one inch across, in colour deep, golden yellow, possessing a very agreeable fragrance, resembling that of the common *Lime*. It grows freely in any good garden soil, and can be readily raised from seeds sown in spring, cuttings in summer, and also by grafting. It is figured and described in the *Botanical Magazine*, p. 495, but this appears to be incorrect, probably being that of *Clematis orientalis*, a species very similar in habit and colour, and not unfrequently sold for the above-named species. *E. S., Working.*

THE BEDDING ARRANGEMENTS IN HYDE PARK.

A VISIT of inspection of the bedding-out method of procedure practised by Mr. Brown in Hyde Park, London, with such good effect is always time well and agreeably spent on the part of country gardeners, who are, as a rule, on the look-out for new and improved ideas in the way of bedding-out. Such a visit was recently made by the writer. Therefore, bearing in mind that only a small percentage of the gardeners living outside of the "home counties" have an opportunity of visiting Hyde Park during the months of August and September, when the various floral arrangements inside the enclosed spaces between the Marble Arch and Stanhope Gate are looking their best, I will give particulars of a few of the most effective, and at the same time, pleasing, and simply-arranged beds, which are mostly oblong in shape.

Commencing at the Marble Arch end, a bed having a ground of erect-growing *Minimus*, interspersed with well-flowered plants of *Tower of London Fuchsia* (red), and dwarf white *Chrysanthemums*, the whole being edged with *Blue Lobelia* (*pumila grandiflora*). The spikes of the large, richly-spotted flowers of the *Minimus* showed off to advantage, and contrasted effectively with the red, white, and blue. Standard plants of *Heliotrope* and *Abutilon niveum marmoratum* dotted in a groundwork of *Cockscomb* and *Begonias*, and edged with *Snowball Lobelias*, made a pretty bed; as also did *Acacia lophantha* intermixed with scarlet-flowering *Begonias*, and edged with a broad band of *Alternanthera amabilis latifolia*. *Fuchsia Lye's Excelsior* and *Solanum pyracanthum*, set in a ground of *Alternanthera versicolor grandis*, and edged with the golden-leaved *Fuchsia Meteor*, pegged down, had a pleasing though quiet effect, as contrasting with that produced by the occupants of a bed close by, having a mixed centre of scarlet zonal (*Wellington*) *Pelargonium*, and *Zea variegata*, and edged with *Royal Purple Lobelia*.

A round bed, close to Grosvenor Gate, filled with dwarf plants of *Cockscombs* (the combs

being of fine size and shape) and French Marigolds, and an erect, gracefully-growing, grass-like plant, the name of which I did not see, edged with the blue Mrs. C. F. Gordon Viola, had a telling effect; as also had an oblong bed close by, filled with well-flowered standard plants of *Fuchsia Madame Cornéllisen* (single white corolla and scarlet tubes and sepals), and *Iresine Herbsti*, set thinly in a ground of *Alyssum saxatile*, variegated, edged with blue-flowered *Viola*. Plants of the deep red double-flowered Ivy-leaved *Pelargonium Madame Mongeot*, intermixed with plants of *Veronica Andersoni variegata* and *Coroopsis grandiflora*, and encircled with blue *Lobelia*, made a very pretty bed indeed. And the same may be said

LILIUM SPECIOSUM.

OUR illustration (fig. 72) presents an example of a very beautiful potful of *L. speciosum*, an old inmate of our gardens, and now in its several varieties a popular market plant. The number of flowers open at the time it was photographed numbered 208, and it was grown with other Lilies in an unheated house. It is now in an 18-inch pot, where it has been grown for the past seventeen years. The Lilies are placed in the open air a few days prior to the flowers opening.

The photograph from which the figure was prepared was kindly sent us by Mr. David Jones, gardener at Hartsheath, near Mold.

balls of the plants, and only a few inches below the surface; this, unless abundance of moisture is supplied, does more harm than good during the hot weather we have lately experienced, as it brings the fibrous roots to the surface only to be scorched off by the great solar heat.

I will now give a few hints on their present treatment up to the time of potting up, which in other years I have found to work well out in practice. The plants dealt with are Violets, Solanums, *Salvias*, *Bonvardias*, Arums, and early autumn-flowering *Chrysanthemums*, &c. Several weeks previous to potting up, I usually dig well round and under the plant, and fill up the cracks with water several times, till the ball of the root is thoroughly soaked through, and afterwards well mulch the surface, to keep in the moisture. It will be found that, with the latent heat and water supplied, the ground will be like a hot-bed, and in a short time fresh fibrous roots will be formed; and great care must be exercised in potting up that the new roots sustain no injury.

The pots used should be at least $1\frac{1}{2}$ inch more in diameter than the ball of the plant taken from the ground, so as to allow room for some silky loam, peat, and sand for the new roots to work into. All the plants, except perhaps *Bonvardias* and Arums, will be soon throwing up their flower-buds, which it will be the aim of the cultivator to fully develop.

When potted up, if the weather permits, the plants would be best stood outside in a shady or north aspect for a few weeks before being housed; but if there is a fear of early frosts, it would be better to place them in a light, cool house, with ventilation on night and day, for some weeks, or till the plants become accustomed to their new conditions, when afterwards less air can be given, *J. D. Godwin*.

GARDEN CITY ASSOCIATION.

THE annual Conference of this young society was held in Birmingham last week, when various papers (printed) were submitted for consideration; but time necessitated the passing on to a supplementary Conference of several of a more or less controversial character. Perhaps the great feature of the gathering was the visit paid to the settlement of Bourneville, where are the manufactories devoted to the production of Cadbury's cocoa, &c., and the many industries growing therefrom. It was an object-lesson never to be forgotten by those privileged to be witnesses. It is in many respects a garden city; the factories have been taken from Birmingham, and the workers followed in their train, and dwellings by the hundred were built to accommodate them—some by the owners of the factories in question, others by outside speculators. The whole, we believe, is now in the hands of a trust, and that is now separated from the wage-payers, so that no trade influence can be brought to bear in case of a dispute. A good amateur gardener is always a good workman; and good workers, as a rule, make good gardeners and fruit-growers. This fact is observed at Bourneville, and the investigating theorists will most certainly take to heart what they saw, and endeavour to improve upon the lesson laid out in tree and plant, and vegetable and flower-garden plants. If the country dweller has ever a yearning for bricks and mortar, surely the workers in cities are ever sighing for the sweet air of the country, and the quiet delights there to be gained. The Cadburys employ some thousands of workers, old and young; it is not overstating the case to affirm that two-thirds of these are much



FIG. 72.—LILIUM SPECIOSUM, GROWN IN THE GARDENS AT HARTSHEATH, NEAR MOLD, FLINTSHIRE.

for another oblong bed filled with grandly-flowered plants of *Erythrina crista-galli* and *Jacobaea*, double rose, edged with a good band of *Alternanthera amena spectabilis*, dotted with *Solanum pyracanthum*. Mention must also be made of a bed of similar shape to the preceding one, filled with well-grown and capitally-flowered plants of *Cesolia pyramidalis coccinea* and *aurca*, and having a broad-panelled band composed alternately of *Alternanthera versicolor grandis* and *Leucophyton Brownii* as an edging—a novel and telling arrangement in the way of an edging, which should vary according to the composition of the beds which it encircles. Hugo specimens of *Heliotrope*, Ivy-leaf *Pelargoniums*, *Plumbago capensis*, and *Eucalyptus Globulus* (Blue Gum-tree) judiciously arranged in isolated groups, add considerably to the variety and floral beauty of this charming part of the park. *H. W. W.*

CULTURAL MEMORANDA.

WINTER-FLOWERING PLANTS.

THE few remarks I am about to make relating to the culture of these plants, refer specially to a class of plants that are often planted out during the early summer, for lifting and potting up in the autumn. The great drought prevailing will have taxed the utmost resources of the grower to supply enough water to the roots of the plants, unless frequent surface-mulchings to conserve moisture has been furnished. The most critical time is from now onwards. Special treatment must be given in order to satisfactorily mature and finish up their growth. I have found that ordinary waterings have failed to touch the

interested in the art and mystery of gardening—an interest, of course, due to their descent from the "grand old gardener"—the first of his noble profession. We wait with interest the results of this last meeting of the Garden City Association.

The Week's Work.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Inverleith, Peeblesshire.

Removing and Planting Peach-trees.—The trees in the earliest and second early houses can now be transplanted or root-pruned, and the operation being carried out whilst there is root action, should be under ordinary circumstances quite successful, for they will have time to form fresh roots before the leaves have wholly fallen. When the Peach-house is getting crowded with trees, it becomes necessary to grub up the inferior varieties, and afford more space to better ones; or it may be desirable to shift trees from the early house to the next division, and *vice versa*. In transplanting, first prepare the new site for the tree, taking care to make the hole large enough to admit of the roots being spread radially, and incorporate with the fresh turfy loam, mortar rubble, freely, and a heavy sprinkling of 3-inch bones. Before lifting a tree, cut away all the shoots that have borne fruit, then loosen the rest of the branches, and lightly bind them together in bundles. Then open a deep fruit trench at a good distance from the stem of the tree, or say at a radius of about half the width of the border, and gradually undermine the whole mass of roots, taking great care to dig out all roots met with, and leave a compact ball of soil which can be comfortably carried on a short, wide, strong board or hand-barrow; carry this to the fresh site, and plant rather high, or sufficiently so as to keep the root-stock or stem-base well above the level of the border. Spread out the roots at different levels, removing damaged ends and wounded bits and sucker-growths. Let the new compost be compacted round the tree and its roots, and new roots will very quickly form. The border before being disturbed should be in a thoroughly moist state, and the transplanted tree afforded more water, especially close up to the stem. Should the foliage flag badly in bright sunny weather, shade the foliage with mats, and frequently moisten it with a syringe, and keep the house somewhat close, currents of dry, cold air being very injurious. If treated in this careful manner, only some of the leaves will drop off prematurely, but the wood and buds will keep fresh and plump; and there is nothing to prevent such trees being forced in due course, and with every prospect of getting a good crop of fruits from them next year.

Late Peach Trees.—After all of the fruits are gathered, thin out the shoots where crowded, and those which have borne fruit, and any not required for extending the tree. With free ventilation and gentle fire-heat in dull weather, in cold localities, and the wood strong, the shoots will mature satisfactorily. The border should, as in the case of this tree in the early-house, be kept in a moderately moist condition, yet not too wet. Soft netting hung under the trees will save fruit from bruising should it fall. It is well to loop the netting up in small pockets, in order to prevent the fruits from bruising each other. If the fruit is carefully looked over every morning by an experienced person, and the ripe fruit removed, there will be very little use for the net. Peaches should be gathered before they are dead ripe, and kept in a light, airy fruit-room for a few days before it is consumed. Peach Prince of Wales is a beautiful fruit when grown under glass and in warm soils, but it is by no means satisfactory against walls outside in Scotland, or in heavy soils. Princess of Wales is one of the best late summer Peaches,

attaining to a large size, and assuming fine colour under favourable conditions. Although Sea Eagle is a pale-coloured fruit, its large size and good quality render it a desirable variety.

THE KITCHEN GARDEN.

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

Cabbages.—Those plants which were pricked out a month ago are ready for planting in their permanent quarters, on the land that was under Onions this year. As this land was well prepared for the Onion crop, it will merely require to have drills drawn about 4 inches in depth, and the Cabbages planted in them. If the nurse-bed is dry, afford water the day before. Lift them with a trowel, and compress the ball slightly, and plant with the trowel. Make the soil firm about them, and apply water if the soil should be dry. In setting out Ellam's Early, Flower of Spring, Mein's No. 1, Beaconfield, and others of like size, 15 inches apart each way will be found a good distance. The varieties of larger growth should be afforded 2 feet; or 1 foot, pulling up for consumption when of useable size each alternate plant, so as to leave them at 2 feet apart. Any plant left in the seed-bed should be pricked out in nurse-beds, the same coming in usefully in early spring in filling up gaps in the rows, &c.

Cardoons.—When dry, the stalks should be tied up, and earth packed round them, so as to well blanch them, similarly to Celery.

Endive.—Continue to thin out and transplant if necessary, allowing a distance of 15 inches each way. Continue to tie up for blanching at weekly intervals as many as will meet the consumption.

Pears.—In this garden the variety Autocrat, sown about the middle of the month of June, is now yielding frequent pickings of well-filled pods. The haulm does not exceed 5 feet in height, and is more conveniently netted from the birds, and less liable to suffer from wind than those which grow higher. Keep the ground moist, and apply weak liquid-manure once a week. The plants may continue to form useful pods for several weeks longer. A long row sowed on June 28 is now in flower, and promises a good crop, or at the least a good set.

Routine work.—Remove exhausted crops of all kinds, and keep the hoes at work for the killing of weeds and the aeration of the soil. It will now be necessary to rake off the weeds after hoeing the land, or they will take root. Vegetable-Marrows and Searlet Runner Beans should be closely gathered, so as to prolong their season of usefulness. The former is largely made into jam in this county, the fruits being gathered when in a fairly ripe condition, and it is very palatable when flavoured with preserved ginger.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Gathering of Apples and Pears.—At this date most early varieties should be gathered, as they keep in better condition when stored than if allowed to remain on the tree; such varieties are Lord Grosvenor, Pott's Seedling, Lord Sulbilly, Warner's King, Frogmore Profusion, Bellville, Cellini, Worcester Pearmain, and others. If not gathered, many of these Apples would also be blown off by the first rough winds. If the fruit store is a good one, some of the varieties may be kept in a sound condition for a considerable length of time. The warm weather was the cause of many varieties of Apples maturing too early, and these are now fit for gathering. Late varieties of Apples should be allowed to hang on the trees till as late as possible, their keeping being considerably prolonged, and the condition of the fruits much improved thereby.

Pears of the early and mid-season varieties ripen quickly, and remain but a short time in a good condition. Many of these should now be gathered, viz., Beurc d'Amanlis, Louise

Bonne of Jersey, and others of this class, taking the more forward fruits first, and the less mature fruits in about a week later. None but sound and good specimens should be stored, and care should be taken not to bruise the fruits. Late varieties may wait for another week or two unless bad weather sets in. The ripening of any of the above-named varieties may be accelerated if desired by placing them in wooden boxes lined with paper, and standing in a warm house, or any position where a temperature of 50° to 60° is maintained.

Various.—The protection of late Plums from wasps and flies will need attention, and for this purpose hexagon netting or thin canvas should be spread over the trees, and tacked down closely at the edges. If the weather becomes stormy, it will also act as a slight protection from rain, which, if it beat against the trees, causes the fruits to split; while ordinary garden netting, placed over the trees in several thicknesses, will also serve as a slight protection against rain and insects. Some of the choicer kinds of Plums may be preserved for some time in good condition if, when gathered, they are wrapped in tissue-paper when quite dry and placed in a box, and stored in a dry, cool room. Where fruit-tree budding has been carried out the stock should be looked over, and the ties around the buds loosened if this be found necessary. It is desirable that the buds should not start into growth till the spring, but where growth has already taken place, it should be hastened by removal of other growths, so that the bud-growth may become as well ripened as possible. Filberts and late Cob-nuts should be gathered while yet firmly fixed in the husk; if allowed to become too ripe, they fall out in the gathering.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

The East India-house.—Afrides having been greatly favoured with bright weather, have generally made good growth, and they should be afforded all the available sunlight possible, but the foliage must not get scorched, as is likely to occur during the sunnier hours; and the new roots should be protected from cockroaches and woodlice by placing beetle-poison for the former, and trapping the latter with hollowed-out Potatoes placed on the compost, and these baits should be examined every morning. The lovely *Aerides Lawrenceae* and the creamy-tinted variety, *A. L. Sandersoniana*, are very useful subjects at the present time; but as the flowers last a considerable time in perfection, care must be taken to remove the flower-racemes as soon as they are properly expanded, or they will have an exhausting effect upon the plants. *A. suavisimum* in its varied forms is also liable to this mishap, by reason of the long duration of the flowers, although owing to the more vigorous constitution of the plant, it does not suffer to the same extent as do the *A. quinquevulnera* section.

Saccolabium will have almost completed their growth, and should receive careful attention in respect to the application of moisture at the roots, not allowing them to become dry before applying water. Until the points of the roots have become sealed over, afford a liberal amount of humidity in the air of the house, the amount being governed by outside conditions. With a low temperature, the plants take little harm if the house be kept fairly dry.

Mittonia × Blenana.—A very charming and desirable hybrid Orchid. It is a rather remarkable fact that the union of two species of *Mittonia*, each somewhat difficult to manage, has produced one of the most vigorous offsprings that can be found among hybrid Orchids, for not only has the growth become more vigorous than that of the parents, but the racemes produce many more flowers than the best examples of *M. vexillaria*. The pseudo-bulbs are now being developed on our plants, and new roots emitted—a good time for giving

attention to potting. The compost which suits the plant is one consisting of chopped sphagnum-moss two parts, and peat one part, with ample drainage afforded. As soon as the re-potting is finished, afford water copiously, and then place them in a fairly bright position at the warmer part of an intermediate-house. If the plants possess sound back pseudo-bulbs, they may be carefully removed with a knife, two pseudo-bulbs being left behind the young growth, and if these back pseudo-bulbs are potted, and placed under fairly close conditions, they will generally push new growths, and thus increase the stock.

Oncidium ornithoglyphum and *O. o. album* are plants whose flower-racemes are now in a forward condition, and the latter should be neatly fastened to neat sticks, for if allowed to grow without this attention, they are very liable to get injured, especially the white-flowered variety, the racemes extending to a greater length, and being very brittle. I find that the white variety expands its flowers more satisfactorily if placed in a warm part of the intermediate-house as soon as the buds commence to form. Care must be taken to avoid letting the plants become dry at the roots.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HISSY'S PACKE, E-q.,
Prestwood Hall, Loughborough.

Lilium longiflorum and *L. auratum*, the flowering of which is past, should be placed outdoors in the sun in order to complete the ripening of the leaves and bulbs. When this is finished, lay the pots on their sides (till the bulbs are re-potted in November). A variety of *Lilium longiflorum* which may be bought at this season in a retarded state, is by some gardeners preferred to the so-called *L. Harrisii*, and these bulbs should be potted forthwith for early flowering in January and later. Place the early bulb in a 6-inch, or three bulbs in an 8-inch pot. These retarded bulbs should be brought on gradually in an intermediate-house from the time they are potted till they flower. The best sort of compost consists of loam two parts, peat one part, leaf-soil one part, with plenty of sand. Half fill the pots with soil, press firmly, and put in the bulbs, covering them to within 2 inches of the rim, which will allow of a top-dressing being afforded later on. Water must be entirely withheld, or applied very sparingly till growth becomes active; and when the pots are filled with roots, weak liquid-manure may be afforded.

Hippeastrum.—These bulbs will have so far completed their growth that they may be placed upon shelves in vineries or Peach-houses, and no more water applied. They should have full exposure to sunshine before being put away for the winter.

Roses in Pots.—Take the earliest opportunity to re-pot the stock of Roses which it is intended to force. Large plants of Teas which cannot be afforded larger pots should be staked and tied afresh, and the crust of soil removed down to the roots, and replaced with a rich compost of strong turfy loam three parts, rotten farmyard manure one part, a quart of bone-meal added to each wheelbarrow load. Ram the soil firmly into the pots, and place the latter in a sunny position. The younger plants may be re-potted into pots a size or two larger, as may seem advisable. The drainage in the pots must be good, the crocks being covered with bits of turf. Let the plants be placed deep enough in the new pots to admit of ample room for holding water. Plunge the plants in a bed of ashes, and protect them from heavy rain. All flower-heads must be removed after re-potting, and with the exception of the removal of dead and very weak shoots, no pruning should be performed at the present time. Orders should be forthwith sent to the nurseryman if plants prepared for pot-work are required. The following Roses are amongst the best varieties to grow in pots:—Annie Olivier, Bridesmaid, Catherine Marnet, Comtesse de

Nadaillae, Ernest Metz, Caroline Kuster, Devoniensis, Beryl, Empress Alexandra, Ethel Brownlow, Goubault, Homer, Hon. E. Gifford, Madame Charles, Madame Chedane Guinoisseau, Madame Cusin, Madame de Watteville, Madame Lambert, Muriel Grahame, Niphotos, Rubens, Souvenir de S. A. Prince, Souvenir de Thérèse Levet, Souvenir d'un Ami, Sunrise, The Bride, and White Manan Cochet. Of Hybrid Perpetuals, the following will be found a good selection, viz., Alfred Colomb, A. K. Williams, Capt. Hayward, Chas. Lefebvre, Duke of Edinburgh, Dupuy Jamin, Fisher Holmes, General Jacqueminot, Madame Gabrielle Lutet, Jeannie Dickson, Marie Baumann, Marie Finger, Mrs. Cocker, Mrs. J. Laing, Mrs. R. G. Sharman Crawford, La France (Hybrid Tea), Mrs. Sandford, Semateur Vaisse, Suzanne-Marie Rodocanachi, Lady May Fitzwilliam, and Ulrich Brunner. In making a selection of Roses, it is as well to buy a sufficient number of each variety, as when forced you can depend upon having a supply of blooms of distinct colours for decorative purposes.

THE APIARY.

B. EXETER.

Bee-driving should by now be nearly finished; but where this has not been already done, no time should be lost in completing it. It must be remembered that driven bees fed up insufficiently will only cause great annoyance and loss in the spring-time, and instead of finding the stocks strong, they will be so weakly, that no return will be shown by them. All the frames should be well sealed over before the winter to prevent the food from fermenting, as this is very injurious to bees.

Strengthening stocks.—The hives that have done very little this year, and marked on your sheet "no returns," should have your attention now, and either re-queen them, or if the stocks are not very strong, unite another lot with them, flowering them first, or spraying them with peppermint to keep them from fighting. If the hive is old and dirty, put them into a clean one at once, and have the old one thoroughly cleaned out and put away to be ready for use when required. When the bees are kept away from the house, and they cannot be given much spare time, place a small piece of green excluder-zinc over the entrance for a couple of days. This will keep the queen from coming out, and in that time they will have settled down.

Feeding.—If the bees do not take the syrup, place two or three hot bricks on the quilting to encourage them, as the warmth will draw them up.

Roofs. Look well over your roofs to see they are water-tight, as damp will soon reduce your bees. If the roof is too bad for repair, cover it with corrugated-iron or felt. Place a little naphthaline in the hive, too.

Honey imports. The value of the honey imported into the United Kingdom during the month of July, 1901, was £11,237.

THE FLOWER GARDEN.

By T. H. ST. YVES, Gardener to Lord Pallimore,
Pottimore Park, Exeter.

Hypericum calycinum, *St. John's Wort*.—This forms a good companion plant to the Vinca, and is one very easily increased, the stolons that arise from the roots affording an easy means of increasing the plant by severing them from the parent plants in early autumn and in the spring. Other good *Hypericum*s are *Moserianum*, flowering about mid-summer, *patulum*, and for late flowering *oblongifolium*, which is now in flower, and is taller and more upright in growth than the other species named.

Brunnensis variegata, *B. Knighti*, and *B. sanguinea*.—Standards of these *Brunnensis* are very effective in the flower garden during the summer months if planted thinly in large beds, the surface of the bed being

planted with some dwarf plants. Where plants are required for next summer, cuttings may now be taken and inserted in sandy soil in pots and placed on a gentle bottom heat, and when rooted they should be potted singly and grown on gently in a temperature of about 55°, and if kept steadily moving they will make good plants for planting next summer.

Plumbago capensis.—Large plants of this associate well when used with Ivy-leaf Pelargonium Minc, Crousse. Cuttings of the shoots taken at this date when the plants are lifted will form useful plants for next summer's planting.

Succinonia alba.—This is a plant of use for summer bedding, but to be effective in one season the plants should be specially prepared and of a good size when planted. Cuttings struck at this date and kept growing in a warm greenhouse will be of a suitable size in May.

Echeveria secunda glauca.—In order to winter this plant, a cold frame, the lights of which are sound, should be prepared to receive the stock it is intended to keep by putting some light, gritty soil into the frame and making it level and firm. When the plants are lifted, first sort them out into different sizes, and plant these separately; it then being an easy matter to ascertain the number. If this is not enough for the purpose, the smaller offsets should be likewise planted. Should the stems of the large plants be tall, shorten them but retain some of the roots. The soil in the frame should have a slight fall from the back towards the front, and the plants may almost touch each other when planted. Afford air to the frame freely, and remove the lights in dry weather. Damp is to be feared more than cold, and if they are afforded water once at planting time, that is usually sufficient for the season.

Dwarf Hardy Plants.—*Cerastium*s, *Sedum*s, *Ajuga reptans*, *Saxifragas*, &c., may be lifted and divided at this season; or they may be left a little longer in the ground. The most suitable place for wintering the subjects is a sunny, well-drained border, damp being injurious to them. In light land, less care is necessary.

Planting Layers of Carnations and Picotees.—The beds, borders, or stations of clumps should now be deeply dug, and if the soil is fairly rich, no manure need be applied at this season, only a dressing of quicklime, which must be incorporated with the staple. This applies to parts of the country in which planting at this season may safely be adopted; but in cold parts and heavy soils anywhere, preparations need not be made till the spring. After trials for three years, I find the variety Viscountess Melville one of the best to withstand damp and cold in heavy land, the variety has the additional merit of being a late bloomer. The flower is of good form; it has perfect calyx, and its colour is a crushed strawberry. Equally good in constitution is Lady Nina Balfour, which is a flower of large size, flesh-coloured, and probably under glass would resemble the old Souvenir de la Malmaison tint. Mrs. Colby Sharpin is of a similar colour to Mrs. Reynolds Hole; the flower has a good calyx, in which it is superior to the last-named, but of not so strong a constitution, and does not always survive the winter here in our heavy land. Garville Gem is all that can be wished for here; but the Old Clove Carnation succumbs to damp; while Mephisto, of much the same shade of colour, is quite satisfactory.

Flower-beds.—Remove spent flowers and yellowing leaves. Although herbaceous rain is badly wanted, the plants have plenty of flowers on them, and should the weather continue fine, and there is no frost, the beds will be presentable for a few weeks longer.

Lawns.—The turf must be often rolled and swept, particularly where deciduous trees exist on or near the lawn.

APPOINTMENTS FOR OCTOBER.

SHOWS.

TUESDAY, Oct. 9.—National Chrysanthemum, early (Oct. 8), Exhibition (3 days).
 THURSDAY, Oct. 10.—Royal Horticultural Society's Show of Fruit at the Crystal Palace (3 days).
 THURSDAY, Oct. 23.—Brixton Stratham, and Clapham Horticultural Society, at Brixton Hall.

MEETINGS.

SAURDAY, Oct. 5.—Société d'Hort de Londres.
 MONDAY, Oct. 14.—United Horticultural Benefit & Prolific Association, Commercial Street, London.
 TUESDAY, Oct. 15.—Royal Horticultural Society, at Drill Hall, Buckingham Gate, Westminster.
 TUESDAY, Oct. 29.—Royal Horticultural Society, at Drill Hall, Buckingham Gate, Westminster.

SALES.

MONDAY, Sept. 29.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms, at 11 o'clock.
 — Special offers of Bulbs for massing and naturalisation, Azaleas, &c., at Stevens' Auction Rooms, at 12.29.
 — Society Stock and Beneficial interest in lease at The Nursery, May Place, Ickley Hoath, by order of Messrs. E. Cooper & Son, by Messrs. Protheroe & Morris, at 1.29.
 — Dutch Bulbs, at Pollexfen & Co., Auction Rooms, Pilgrim Street, Ludgate Hill, E.C., at 12.30 o'clock.
 TUESDAY, Oct. 1.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms, at 11 o'clock.
 — Dutch Bulbs, at Pollexfen & Co., Auction Rooms, Pilgrim Street, Ludgate Hill, E.C., at 12.30 o'clock.
 TUESDAY and WEDNESDAY, Oct. 1 and 2.—200,000 Fruit Trees, in grand condition and variety, at Silson Yards, K.S.O., by order of Messrs. Smith & Son, by Messrs. Protheroe & Morris, at 11 o'clock.
 WEDNESDAY, Oct. 2.—Dutch Bulbs, Azaleas, Rhododendrons, &c., at Messrs. Protheroe & Morris' Rooms, at 11 o'clock.
 — Bulbs, Flowering Plants, &c., at Stevens' Auction Rooms, at 12.29.
 — Dutch Bulbs, at Pollexfen & Co., Auction Rooms, Pilgrim Street, Ludgate Hill, E.C., at 12.30 o'clock.
 THURSDAY, Oct. 3.—Dutch Bulbs, at Messrs. Protheroe & Morris' Rooms, at 11 o'clock.
 — Great Clearance Sale of Fruit Trees, at Nursery, Chiswell, Norfolk, by order of Messrs. J. R. Pearson & Son, by Messrs. Protheroe & Morris, at 11 o'clock.
 — Palms, Azaleas, Bulbs, &c., at Pollexfen & Co., Auction Rooms, Pilgrim Street, Ludgate Hill, E.C., at 12.30 o'clock.
 FRIDAY, Oct. 4.—Dutch Bulbs, Orchids, at Messrs. Protheroe & Morris' Rooms.
 — Dutch Bulbs, at Pollexfen & Co., Auction Rooms, Pilgrim Street, Ludgate Hill, E.C., at 12.30 o'clock.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—54.5.

ACTUAL TEMPERATURES.—
 LONDON.—September 25 (6 P.M.) Max. 68°, Min. 56°,
 September 26.—First fog of the season.
 September 26.—Fine, warm.
 PROVINCIALS.—September 25 (6 P.M.) Max. 61°, Home Counties, Min. 53°, N.E. Scotland.

When this phenomenon was first observed, it was thought to be so incredible that the testimony of a single witness to its occurrence could not be accepted, but the evidence of numerous witnesses was required. In the Kew Herbarium is a drawing of such a case, and attached to it is a document (or a copy of the original document, we forget which), signed by a number of the leading botanists of the time, and bearing witness to the truth of the alleged occurrence. This was, if we remember rightly, in the latter part of the eighteenth century. Since that time many similar instances have been recorded, and some have been figured in our own columns. Another example has lately been sent us from Ragley Gardens, Alcester, from which establishment Mr. A. D. CHRISTIE sends us a branch with three Nectarines and one Peach. The tree was bought as a maiden Peach four years ago. Whether it produced Peaches before we do not know. All we can say is, that the Peach was a Peach and nothing but a Peach; and the three Nectarines were equally distinct in their way, flavour included. We mention this because it has happened to us to see a fruit half Nectarine, half Peach (fig. 73). Mr. CHRISTIE asks us how this happens, and whether the Nectarine is a sport from the

Peach. As the Peach was known first, we presume there is no doubt the Nectarine is a "sport," and the "sportiveness" is not confined to the bud, but the seeds of Peaches sometimes also give origin to Nectarines; but then come the questions, how? why? Very often these sports are the result of the dissociation of previously blended characters. It is possible that cross-fertilisation occurred between a Peach and a Nectarine some generations ago, that the resulting offspring did not at first show any trace of the cross, but that now from some reason which we cannot fathom, there has been a sudden reversion, and the heretofore mixed elements become separated. We do not think the Mendelian "law" affects the probability of our suggestion, but in any case, this explanation will not suffice to account for the first production of the Nectarine.

Nectarines are generally reproduced from seed just as Peaches are, and hence it is not wonderful that some botanists have considered the Peach and the Nectarine to be of different species. The occurrence of the two on the same shoot, however, forbids us to accept this opinion, though we may fairly look on the Nectarine as a species in process of

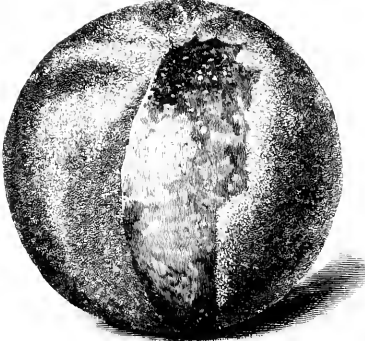


FIG. 73.—FRUIT HALF PEACH, HALF NECTARINE.

formation. The reader will find in the first volume of DARWIN'S *Variation of Animals and Plants*, a long discussion on the origin of the Nectarine, the variation of Peaches, from seed and otherwise, largely based on the communication of Mr. RIVERS and others to our own columns.

A GREAT deal of interest is excited just now in market circles by the unfair use of "empties," as illustrated by some questions in our last issue, p. 234. JOHN SMITH & Co., we will say, feel aggrieved when they see their "sieves" and other packages made use of by unauthorised growers and salesmen. JOHN SMITH & Co. have purchased the baskets in the first instance for the convenience of growers, and of their customers, and when they find these baskets made use of by someone else, they very naturally resent the practice, and sometimes have invoked the aid of the law to protect their rights.

In order to let our readers who are interested in the matter see how the case stands, we have made enquiries of several salesmen in the market, and have elicited the fact that the matter is not so simple as it looks, and that there is some diversity of opinion, and of practice.

Referring to the questions put in a recent number (p. 234), one salesman says: The best way for the salesmen to protect themselves is to register their names or designs under the Trade Marks Act. Several cases have been recently tried and damages obtained against the persons making unlawful use of the "empties."

As to compelling railway companies to disclose the names of the parties thus fraudulently making use of their neighbours' packages, we are advised that as the railway companies are common carriers only, they cannot be compelled to give up the names of the consignors of goods.

Another firm issues the following circular:—

Trade Marks Act, 1883. ss 6 & 17 Viet. ch. 57.

NOTICE.

We wish respectfully to call your attention to the fact that we have registered our name "A. B. C. & Co.," as our Trade Mark under the above Act, and to notify you that all kinds of Baskets, Boxes, Bags, &c., &c., bearing that Mark must not be used for any purpose except that for which they are sent to you, viz.:—to fill with Fruit or other produce, and [to be] returned direct to us.

Anyone using them for any other purpose renders himself liable to the penalties attached thereto.

A. B. C. & Co., Covent Garden.

A representative of one of the oldest and most highly respected firms said that so far as he knew, empties were lent to those growers who required them (sieves) at a charge of 1s. *returable*. He knew of some dealers in other cities who charged 1s. 6d. *not returable*, but that was not the custom in Covent Garden. It seemed that sieves became almost anyone's property, and the rightful owner had no redress. The value of baskets was so uncertain that a man did not know if he took a case into court what the value of the baskets might be when he parted with them to someone who bought produce from him. He did not know their condition, whether new, quite sound, or decaying; consequently, he could not put a value on them. Then baskets, once lent to men living at a distance, did not come back in their full tally, but out of 100 you might get 80; then in the course of a year, the remaining 20. If you wrote reminding him of non-returable empties, he would remark on the badness of trade, or the want of opportunity to return them. The entire matter is unsatisfactory, but he saw no means of altering it.

It would be impudent for the larger salesmen to squeeze their customers too much, as they would then get a reputation in the market for being hard men to deal with.

If you saw a man, said our informant, going to a market or railway station with produce packed in baskets that you knew to be yours, you could not insist on the produce being turned out, unless he was provided (on the spot) with other baskets to put it into. Otherwise the grower would sue you for damage to his fruit, and perhaps the loss of a market. In that case it would be better to let the baskets go. Baskets, i.e., sieves or bushels, circulate in Covent Garden market among dealers and growers, and are generally or always interchangeable for one shilling. There is a general desire among traders to act honestly and fairly, but from carelessness, or in the hurry of business looseness of practice sometimes occurs.

ROYAL HORTICULTURAL SOCIETY'S CRYSTAL PALACE FRUIT SHOW, OCTOBER 10, 11, 12.—Intending exhibitors are reminded that entries for this show close on Thursday, October 3. Copies of the prize schedule with entry form can be obtained on application to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W. On each day of the Show after 10 A.M. Fellows of the Society, on showing their tickets at the turnstile, will be admitted to the Palace free.

— At a general meeting of the Royal Horticultural Society, held on Tuesday, Sept. 21, twenty new Fellows were elected, making 760 since the beginning of the present year.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—A meeting will be held at the Sunflower Temperance Hotel, on Tuesday evening, October 1, when a paper will be read by Mr. H. HARRIS on "Roses."

CURE FOR THE BLACK SPOT IN TOMATOS.

—Ever since this fungus disease of the Tomato made its appearance in this country, gardeners have been helpless in the matter of cure or alleviation; and beyond removing the fruit and burning it, so as to prevent the diffusion of the spores, nothing could be done. Now, Mr. J. THOMAS, landscape gardener, 1, Warwick Grove, Surbiton, alleges that he has found the remedy for attacks of *Cladosporium lycopersicæ*, and certainly some fruits, which he brought to us a few days ago, and which are lying before us, show that he is correct in his statement, for the fungus is killed superficially, and appears as a dry, brown incrustation; even the flesh below it is quite sound and uninjured, and the fruit as good as possible, barring the little blemishes of about the size of a shilling. The inventor would willingly dress any diseased fruits if requested to do so, but until he has patented the substance, he will not let it out of his hands. It is obvious that the remedy should be applied to the leaves and to the berries when quite young. It must be remembered also that the spawn of the fungus is internal, so that external applications, however useful, are only of a palliative nature.

PEARS.—*Senateur Vaisse* is crisp, juicy, slightly perfumed, slightly gritty throughout, very sweet, and good eating. A fruit 2½ inches high, and 2 inches wide; the skin of a pale yellow before us, but with a rosy tint on the sunny side; core small, and containing but few good seeds; stalk ½ inch long, and fleshy, set slightly obliquely. *Beurré Mortillet* is a handsome Pear, bright red on the sunny side, and covered with minute dots; on the shaded side it is, when ripe, of a pale yellow tint, and free from dots. The fruit is of pyramidal form; eye set in a very shallow basin; segments incurved, but not closing; stalk ¾ of an inch long, stout, but not fleshy, inserted obliquely, and rather more on one side of the apex than the other. We are indebted to Mr. SLADE, of Poltimore, Exeter, for a few specimens of these fine-looking early Pears, of which, unfortunately, the last-named was over-ripe.

CENTRAL LIBRARY, CARDIFF.—The librarian has issued the following note attached to a list of books, periodicals, and journals of value to the gardeners of Cardiff:—"The Free Libraries Committee has ordered to be printed and circulated a series of special bulletins, showing how the libraries provide for different sections of the ratepayers. This bulletin, the second of the series, containing information for gardeners, was first issued in November, 1899. The library is the property of the ratepayers, provided by their own funds for their

common use, and every department is equally at the service of the public, the only restriction imposed being good behaviour." The list contains the titles of a large number of books of great use to gardeners in general, and of standard botanical works, besides those of general interest, and some special treatises. Gardening journals are supplied to the Cathays, Roath, Canton, Grangetown Docks, and Spottland branches from the Central Library. The example set by Cardiff is one that should be more generally followed by municipal reading-room committees of management.

AGAVE AMERICANA.—In the gardens of HENRY LOVETT, Esq., Low Hill, Bushbury, Wolverhampton, is at the present time a specimen of the so-called American Aloe in bloom. Mr. SHARPE, the gardener, informs us that the flower-spike is 20 feet high, and bears over 2,000 flowers.

THE IMPERIAL DEPARTMENT OF AGRICULTURE OF THE WEST INDIES.—The Department was instituted in 1897, to impart technical knowledge to those already engaged or about to engage in agriculture, and thereby to aid in the equipment of the West Indian planters for competition against the many formidable rivals by which they are confronted. Circumstances demanded that the appointed Commissioner should be no faddist, but a man of sound and thorough scientific knowledge, and also of some practical experience, and Dr. MORRIS has given great satisfaction in every respect. The study of such matters as plant-selection, the quality of plant-foods, the habits and life-history of vegetable parasites, the comparative value and the use of fungicides, the application of preventives, and other points of scientific agriculture, are now receiving a due degree of attention, and planters and scientists unite in their work. There has been successfully laid the foundations of a system of scientific agriculture, and for this praise is due to Dr. MORRIS, and he is to be congratulated on the progress already achieved. Our contemporary, the *Barbados Agricultural Reporter*, expresses our own feelings as to the value of the work undertaken by Dr. MORRIS.

THE LEGUMINOSÆ. Turning over the last volume of the *Wiener Illustrirte Garten-Zeitung*, we came upon a series of articles on this important natural order by our old friend and contributor, Dr. ED. GOEZE, the Curator of the Botanic Garden at Greifswald. Dr. GOEZE has collected so many interesting facts together, that the existence of such a rich source of information deserves recording. He describes their general structure, distribution, and products of the order, and enters more into details of the peculiarities exhibited by various genera and species, both in structure and physiological phenomena. Then their ornamental contingent is reviewed, and the whole is supplemented by a classified and partially descriptive enumeration of the most important useful plants belonging to this family, beginning with those which provide food for man, with their native countries, so far as they are known. First come those of which the pod or seed, or both, are eaten, followed by those in which the leaves or tubers are the edible parts. The other headings are Medicinal Plants; Poisonous Plants; Plants yielding Balsams, Resins, Gums, and Oils; Plants used in Dyeing; Plants used in Tanning; Saponaceous Plants; Plants yielding Fibres; and Valuable Timber Trees.

PÆONY FOLLICLES.—Mr. D. A. BOESH, obligingly sends us follicles of Pæony officinalis, showing the brilliant crimson axils which

partially surround the seeds, and form such a contrast to the shining black seed-coats. The specimens are further interesting in that they were taken from plants which are lineally descended from those growing in a naturalised condition in the Steep Holms Island. The capsules and seeds of *Iris fetidissima* are also very richly coloured, and are used for decorative purposes. At the time of the famous Titchborne Trial these seed-vessels were sold in Covent Garden Market as "Titchbornes;" but the name did not "catch on," and is now disused.

A NATIONAL PARK.—The idea thrown out by Mr. BURBIDGE in the last number of the *Journal of the Royal Horticultural Society* receives the warmest support from our old correspondent, Mr. W. MILLER. The limitations of our space prevent our printing his letter in full, but we fully agree with him in his appreciation of Mr. BURBIDGE'S paper. It will be remembered that something of the same kind was suggested, some years since, in connection with Epping Forest.

MOTOR CARS AND MARKET PRODUCE.—The problem of delivering perishable produce, such as flowers and fruit, in London markets by means of motor-cars is receiving serious attention. A service which was established between London and Taunbridge Wells, and which gave satisfaction and was useful to agriculturists, has had to be suspended on account of the inadequacy of the plant necessary to cope with the large consignments of goods sent for prompt delivery, and the service of an increased number of vehicles is being organised to meet the requirements. Similar schemes are being organised in other directions. In some trial journeys, loads of fruit were conveyed from Maidstone to London in less than six hours; and in another case the fruit left Sittingbourne at 7.30 P.M., and was delivered at Covent Garden Market the next morning at 3 A.M. The fruit will require much less handling, as the automobile will take it almost from the farm to the market; whereas, in the present case, it has to be brought to the railway, and then re-carried from the London goods station to the market. *St. James's Gazette*.

VICTORIA.—We learn from the pages of *Nature*, that the Government of this Colony have appointed, or are about to appoint, a Director of Agriculture. Further, that they have applied to the United States Government to recommend a suitable person, and that the U.S. Department of Agriculture have recommended Prof. GALLOWAY and Prof. HAYS, both well known and appreciated here—but is it not a reflexion upon the mother country that applications should have to be made to the new world for what ought surely to be forthcoming from the old country?

SWEET PEAS.—American journals are lamenting the enfeebled condition and decadence of the Sweet Pea. Even under the most favourable conditions they show a precarious struggle for existence. The Rev. W. T. HITCHCOCK, writing from Springfield, Mass., speaks of the decadence as "an awful case of backsliding;"—"the fact remains as a ghastly specter (sic)"—"a Mark Twain sort of phrase that. Some say the mischief is due to growing in the eastern States seeds grown under the very different climatal conditions of California. Others attribute it to bacteria—a convenient scapegoat now-a-days, or to fungi. Some recommend the application to the roots of bisulphide of carbon (not bisulphate as printed). We are not told what enemy the bisulphide is aimed at. Happily, we are at present exempt from this trouble, whatever it may be.

JAPANESE IRISES.—It appears that the Irises mentioned as growing in the gardens at Haldon House, Exeter, were not imported direct from Japan, but were supplied by Messrs. GAUNTLETT & Co., the Japanese Nurseries, Redruth. These gentlemen make Japanese Bamboos, Irises, Peonies, Maples, &c., specialties of their business.

FLOWERS IN SEASON.—We have received from Messrs. STORRIE & STORRIE, nurserymen, of Dundee, some score of blooms of tuberous-rooted Begonias, consisting of single-flowered varieties, most of which measure $5\frac{1}{2}$ to 6 inches in diameter, and the colours include crimson of several shades, scarlet, rose colour, and also white. We shall be so much usefulness in flowers of such abnormal proportions. As specimens of great cultural skill and careful selection the Begonias are worthy of notice, seeing that the plants have been treated as annuals, the seeds having been sown in the last week of January this year, and the plants grown steadily and continuously. They began to flower in July, towards the end of the month. The strain has taken about six years to fix and arrive at its present stage of development, and the blooms sent for our inspection were quite characteristic, having strong foot-stalks, which support the blooms erectly.

NEW IRISH INDUSTRY.—We are glad to learn that an effort is to be made to establish a jam factory in Drogheda. The Plums are grown around this locality, and every pound they can make there will find a ready purchase. The Irish Agricultural Association is doing good work, and if it is profitable to grow and send from Siberia butter and other agricultural products to this country, it ought to be a source of profit to Irish cultivators of all kinds to lead the way.

MADE IN GERMANY.—A German firm of manufacturers, availing itself of a scientific discovery, employs 118 skilled chemists, 75 engineers, and 305 clerks, and makes a substitute for Indigo by a synthetic chemical process. This product can be made much more cheaply than Indigo can be grown. This is how Germans make use of their technical education!

EXHIBITION IN THE "FLORA" GARDENS AT COLOGNE.—From November 10 to 16 an exhibition of Chrysanthemums and objects of the florists' art will be held in the "Flora," at Cologne. Persons may exhibit from other parts of Germany, but they cannot compete for prizes.

MELBOURNE BOTANIC GARDEN.

In the present issue we give as a Supplement an illustration showing a view in the Botanic Gardens, Melbourne, in reference to which we may appropriately cite the following remarks made by Mr. J. H. Veitch in the *Gard. Chron.*, Sept. 15, 1894, pp. 308, 309, and by Mr. Peter Barr, in a Melbourne paper, on the occasion of his visit a month or two since:—

During Mr. Guilfoyle's twenty-eight years' tenure of office, he has rendered the Botanic Garden one of great interest to a landscape gardener. Covering some 60 acres of ground, including a lake of 3 acres, there is, doubtless, ample opportunity, more especially as the nature of the site considerably aids this end. Rich grassy lawns and slopes, interminable winding walks, and bold sweeping beds, in pure English style, complete as fine a general landscape effect as is to be met with anywhere. Beds devoted to natural orders, others reserved for the flora of various countries or continents; others still arranged from the gardener's point of view, offer interesting studies to all lovers of plants. It is unquestionably the best-labelled garden I ever entered. In addition to the botanical name, the name of its author, the popular name, the habitat, order, and, in some instances, the economic or medi-

* The Botanic Gardens proper now cover a space of, approximately, 50 acres.

cal names of the plant, are legibly given. Eleven entrances admit from the reserves; opposite some of these large beds are apportioned to the various natural orders, whilst for nearly two-thirds of the garden circumference a broad border is devoted to the flora of the Australian continent—a singularly complete and useful collection.

Mr. Guilfoyle has a good eye for colour. Many of the beds being picked out with yellow foliage Neriums, purple Castor-oil, yellow and silver variegated Eucalyptus, silver Box, and others, &c. These are but a few amongst many others. His attention has also been invited by Mr. Veitch to several beds devoted to a large collection of medicinal plants, every label stating in red the various properties of the plants; and to a large shade-house representing by pot plants all the known botanical orders.

A walk of nearly 1,000 feet in length winds through the Fern gully, lined on either side by Tree-Ferns, *Arachis papyrifera*, *Alphitonia*, *Dicks-onias*, *Croton*, *Strelitzia Regina*, *Orethalia*, *Prægnan* (*Cordylines*), *Livistonia*, *Chamæropus*, &c.

Near the Fern gully are three beds devoted to the Monocotyledons, Dicotyledons, and Acotyledons. Neatly painted boards are positioned, explicitly defining the various differences.

The Museum of Economic Botany, initiated, constructed, and entirely arranged under Mr. Guilfoyle's immediate supervision, is finally referred to by Mr. Veitch as follows:—"It is of exceptional interest; the Catalogue collection consists of over 2,000 specimens, and in the various cases are collections of gums, Eucalyptus oils, dyes, tobacco, fibres, perfumes, medicinal products, Cocoa, Coffee, Teas, Sago, &c., accompanied by dried specimens of the plants they are extracted from, and labels explaining their uses. Woods are well and largely represented by fine, broad slabs. The section of a stem of *Aranea* Bidwell is a feet 7 inches in diameter, the bark alone being 7 inches deep all round. On the other wall are massive planks of Blackwood (*Acacia melanoxylon*), *Podocarpus dactyloides*, *P. spicata*, and *Laurencia* *cupressinum*, the more general collection being arranged or grouped round the sides. Papers and Veneers occupy several show cases."

It may be added, as showing evidences of good will and practical interest, that Mr. Guilfoyle had, as seen by the labels, many valuable contributions from the hands of various European and other establishments, notably Sir Joseph D. Hooker, the former and talented Director of the Royal Gardens, Kew, England.

The following notes record the impression of a more recent traveller, Mr. Peter Barr, who says:—"The recent improvements along the Yarra have allowed a few acres to be added to the gardens, which the director is now making excellent use of with the view to completing his scheme. The new section adjoins the south bank of the river, and lies near the back of Government House. At this point a massive bank of earth stands out like a headland overlooking the newly-planted avenue on the river's bank, and this will probably be selected as the site for a main entrance. A few years hence the avenue opening from Prince's bridge should form a beautiful approach from the city to the gardens, while the distance is so short as to enable any citizen to visit a spot which has attractions unknown to many of the city, not to speak of the rest of the colony."

The grounds were first laid out in the early forties, but when Mr. Guilfoyle was appointed director, in 1875, he commenced to remodel the garden in accordance with a plan designed by him on English landscape principles. "You have here," says Mr. Barr, "gardens which compare favourably rarely and together. You possess an extensive collection of trees, shrubs, and plants, all labelled with their respective botanical and vernacular names, and easily accessible to students, and on the other hand this immense collection is so arranged that the highest form of landscape gardening has been attained. The Royal Botanic Gardens of Edinburgh and Kew, in Scotland, England, suffer in contrast with the Melbourne grounds so far as concerns the latter feature. The collection of plants at Kew is, of course, univalued; but situated as it is on a flat, it has been impossible to secure the landscape effects so admirably worked out by Mr. Guilfoyle." Although it is easily seen that the rises, gullies, and streams, and their views, admirably to effective designs in grouping trees and plants, and in laying out sweeping stretches of lawn, still this does not mean that due credit is to be denied to the designer. New phases and changing views are found at every turn. Mr. Barr's idea of "no limit" is well exemplified in one instance that may be noted. To stand on the lawn near the office, adjoining the present main entrance, and look towards Government House, one is tempted to take in clumps of trees some distance away as part of the scheme of design, which apparently includes the timber within the garden boundary. The fact is, however, that the boundary fence of the garden is only a dozen yards away from the spot on which we are standing, but it is so cunningly hidden that the outlying vegetation appears to be part of the design.

The undulating lawns, stretching away between massive clumps of vegetation, are in places dotted with

beds devoted to different sections of plants, while flower-fringed borders help the general design with their pleasing lack of formality. There are no geometric lines, but the eye with their stiff, straight lines, but where the ground shows naturally to suit a graceful curve the beds and plants are arranged with the object of conforming to designs tending to develop effects which look natural. A gully winds through the gardens, and here thousands of Ferns, trees, and shrubs are growing in picturesque masses. There are hundreds of the native tree Ferns, which are sheltered by native and exotic magnificence trees and shrubs. *Platycodon*, *Polypodium*, *A-plenium* and other epiphytal Ferns of Queensland and New South Wales are fixed to the larger Ferns and trees, while the general appearance of the luxuriant vegetation has a material effect in the landscape scheme, as portions at least of the gully may be viewed from almost any part of the gardens.

One of the most pleasing examples of Mr. Guilfoyle's method is centred in an arrangement for rockwork, as yet incomplete. The gardens are watered from a reservoir situated on top of the highest rise within the area, under the director's control. Always an unsightly spot in the gardens, and naturally most conspicuous, Mr. Guilfoyle hit upon the idea of building a rockery round the banks of the reservoir in the form of an extinct volcano. This section is now complete, and the design is so contrived that part of the lawn sloping away from the "crater" has been reserved in a manner suggestive of a natural formation, due to a one time lava flow. In another direction the natural slope of the hill will be marked with a series of rockeries, which will appear to have fallen naturally from the main "crater," and a series of smaller eruptions in the vicinity. Clumps of rock are dotted here and there along a natural contour, and a path leading to the rockery, the visitor who chooses to follow the design through the flower-beds, trees and shrubs, to its completion, finds that it is so thorough that masses of rock are to be seen lying at the water's edge, where they have seemingly lodged after rolling down from the source of the main eruption. The lake covers about eight acres and is situated on the northern boundary, and close to the proposed entrance, and is a fine example of a lake. Prince's bridge, small islands in the lake are massed with palms, shrubs and plants, while the *Cyperus papyrus* reed grows in profusion at the water's edge. Though incomplete at present, owing to the recent improvements on the adjoining river's bank, the lake forms a most picturesque section of the gardens, and, like other features already noted, possesses the appearance of being a natural part of water. Viewed from any of the slopes in this undulating garden, the lake is especially charming; such details as a mass of one of the green-leaved *Coprosma*, sloping towards the water, have lost a pleasing effect, while other specimens of vegetation are grouped with admirable taste. A further note may be made of the use to which Mr. Guilfoyle puts the extensive lawn. This large, and low-growing plant is grown in masses along the edges of beds, and forms a solid but beautiful foundation for the clumps of trees and shrubs in the background. Mr. Barr remarked that in no part of Europe, not even in Portugal, could they grow *Avantium* with leaves bearing the beautiful gloss so pronounced in the specimens he has seen in Australia. It was from the leaf of the *Avantium* that the name of the plant was derived, so familiar in Cornish architecture. In this connection a suggestion is made that is worthy of consideration. In some examples of modern architecture, designs have become so mixed that in many buildings it is hard to classify the style, as an architect may utilize designs from different periods, the result being something of a composite character. "Would it not be well," says Mr. Guilfoyle, "if our architects sought amongst typical forms of Australian flora for suggestions before designing the buildings of the federal capital? The Stag-horn Fern, for example, might be submitted as an effective design." Architecture, now that the subject has been broached, may be noticed in its relationship to landscape gardening. Kiosks, used as resting places, are a feature in the design of the gardens, and in the construction of these buildings Mr. Guilfoyle has adopted a rather novel idea. The sides of some of the kiosks are made with inlaid panels, for which Mallee roots are used. The design attained by this means is uncommon and most effective, and is one that might well be noted as useful in some sections of house architecture. Attention may be directed to the inlaid panels of a new bridge, as they are constructed between two islands in the lake, and Mr. Barr expressed the hope that it would be kept as plain as possible. "In some American parks," he stated "the most objectionable features are centred in the bridges over artificial lakes. The designer always seemed to make them obtrusive, and they stood out as if saying, 'Look at me, I am a bridge'; but the tendency should be to arrange the construction in such a way as to be almost unseen to the visitor when viewing the landscape as a whole."

THE ROYAL VISIT.

The day after the arrival of the Royal visitors in Melbourne, the Duchess of Cornwall and York paid a visit to the botanic gardens, and was shown round by Mr. W. R. Guilfoyle, the Director. Her Royal Highness was particularly struck with the spacious lawns of Ballfarmers, the varied groups of foliage studded here and

There, and the picturesque views obtainable at very few places; while at the same time notice was taken of the careful attention which has been bestowed upon the labelling of the plants everywhere. At the request of the Director, the Duchess planted a Cedar of Lebanon on the edge of the fine sward which slopes down near the Government House towards the lake, and which is known as "Hoptoun Lawn."

On the 12th inst., the Duke and Duchess paid another visit to the gardens, accompanied by Lord and Lady Hoptoun. The Duke planted a Cedar not far from the one previously planted by the Duchess, and afterwards inspected the Fan Palms planted twenty years ago by himself and his late brother, the Duke of Avondale and Clarence, when midshipmen on H.M.S. Bacchante. These Palms are now vigorous specimens, and may be seen on the lawn to the west side of the smaller lake, and known ever since as the "Princes' Lawn." The same spade with which the midshipmen planted their Palms in 1881 was used by the Duke and the Duchess for planting their memorial trees. Their Royal Highnesses were in every way pleased with the gardens, and before leaving for Brisbane, the Duchess sent to Mr. Guilloffe a full length panel portrait of herself, bearing her autograph, and also a photograph group of her three children, the Princess Victoria, and the Princes Albert and Edward. Mr. Guilloffe says he will treasure these as highly as the pictures with the autographs "George" and "Edward" handed to him by the Royal Princes twenty years ago.

HOME CORRESPONDENCE.

SINGLE-FLOWERED ROSES.—In a very informative article under this heading by your talented correspondent, "Wild Rose," p. 209 of the *Gardeners' Chronicle* for September 11, it is stated that certain beautiful single Roses are only midsummer bloomers. Amongst these, "Wild Rose" includes *Bardon Job*, and gives this variety a very high meed of praise, which it richly deserves. Nothing more brilliant and attractive on a sunny day exists amongst Roses; but "Wild Rose" does not do it justice by including it with those that are only mid-summer-bloomers, as it is both most prolific and perpetual in flowering. My plants were only planted in February last, and consequently not strong; but it has been in bloom since June, and now (September 16) is covered with buds. Its young shoots are of a most attractive reddish tint. Altogether no more attractive Rose exists. Not the least of its merits is that, planted in the open border, it is the first to bloom, quite ten days earlier than *General Jacqueminot*. To my thinking, it is a much superior thing to *Crimson Rambler*, and I would warmly recommend it to every lover of showy garden Roses. T. M. E.

PLUM-DRYING.—When, a few years since, the drying of fruits here was tried, especially at Chiswick, in 1892, it was found that the results were not highly encouraging, the cost generally proving too great; whilst in the case of Plums, especially our common thin-skinned and juicy varieties, were not found suitable. The late Chairman of the Royal Horticultural Society's Fruit Committee in a private way conducted some experiments, and he found that whilst such inferior Plums as the Italian Prune and the Brussels would dry fairly well, such varieties as *Victoria*, the one more than all others of which we at times have too abundant crops, were not suitable, and would not pay to dry. The American evaporator, tried for some time at Chiswick is perhaps, like the dryer mentioned by Mr. Harper. In any case, so far, the experiments named have not been encouraging. Our fruit generally seems to be more juicy than are similar fruits grown in France or in America. That estimate seems to be supported by Mr. Harper's statement that English Plums lost from two-thirds to three-fourths their weight in the drying process. When it is remembered that the stone still remains, and has perhaps lost nothing, it is easy to understand how much dried fruits must be reduced in bulk. It is easy to say we ought to do this, that, and the other to compete with foreign products; but in some things profitable competition is not possible. I fear fruit-drying for commercial purposes is one of them.

There has been no lack of effort to do so in the past, but with little success; yet it is but fair to assume that were it possible to carry out fruit-drying with any sound hope of profit, it would be done, as home people are not quite devoid of competitive spirit. A. D. [We are afraid there is really a lack of enterprise. Ed.]

—Some years ago some experiments in fruit drying by means of Mayfarth's apparatus were carried out in this country, but the results were not encouraging, although the reasons why they should not have been so, considered in the case of Apples and Pears, I do not know. With Plums it is different, and there the reasons are quite apparent. The dried Plums with which the foreigner supplies us consist mostly of *Reine Claude* (*Green-Gages*) of different varieties, and the German, Italian, or Bosnian *Schwetzel*, all very sugary, delicious varieties of the Plum, which only require a moderate degree of drying to keep for years. These varieties are grown especially for drying purposes in France, about Bordeaux, in some parts of Austria, Bohemia, and the coast-land of the Adriatic, as well as in California. Wherever the *Green-Gage* is grown in quantity in this country, drying should be carried on, on the spot, so as to avoid injury to the fruit by transit by road and rail. It will not do to carry the fruit to the drying apparatus. The latter must be brought to the fruit, and thus one source of expense obliterated. The same with Apples and Pears. Again, *Green-Gages* should be grown specially for drying, otherwise the grocers will look to those sources whence a regular yearly supply is obtainable; and even so in this country, except in the most favoured counties, we cannot reckon on a good "Plum year" oftener than one year in four. The whole of our common Plums are useless for drying, or for any other purpose, excepting for bottling and jam-making, and many of them are too large for drying. They might make a "Slibowitz or Pfaffen Geist," which only a Pole or East Prussian would prefer to good whiskey, although it is potent enough. What is wanted is a whole countryside to take up the business and grow *Green-Gages* and no other fruit for the dryers and finishers. M.

THE CAPE GOOSEBERRY.—In last week's *Gardeners' Chronicle* I read with pleasure some remarks on the above. Nearly forty years since, when gardener at Osberton, in Nottinghamshire, I used to devote a small glasshouse to its cultivation as a preserving fruit, Viscountess Milton having been fond of it. I wonder that the fruit is not more generally cultivated, and if it would pay to grow for market. The plant is fruitful, grows in any kind of soil, and the fruit when ripe has an agreeable flavour. The only pest it has is a white fly, very similar to the one that is troublesome in Tomato-houses. The plant succeeds in very warm summers out of doors, and at Osberton I grew plants in large pots and trained them on bare parts of the Peach-wall with excellent results. Although it was grown at Osberton for many years specially for preserving purposes, it was frequently eaten at dessert, and many of the visitors who partook of the fruit were pleased with it, and have come to see the plants and gain some knowledge of my method of culture. The Tomato took many years ere it came into general use; why should not the Cape Gooseberry in time find equal favour? *Edward Bennett, Furzboro', Hunts.*

THE FOOD OF SOME BIRDS INHABITING AN ORCHARD.—The articles on this subject in the *Gardeners' Chronicle* have been most interesting to me, especially the statement that the flycatcher eats wasps. In the summer of 1900, also in the last summer, a pair of these birds have been daily under my notice, and that they devour numbers of bees I am quite positive. My notice was attracted to them by their frequent swoops down in the neighbourhood of some bee-hives, and I saw seven incoming bees taken in less than ten minutes; and moreover, the flycatchers reared a brood of four young ones, and fed them to a large

extent upon bees thus taken, and old and young have been seen daily in and about the Pine-trees near the bee-hives, and very many bees have been captured. I made many attempts to destroy them without success, so sharp were they that they seemed to foresee danger. I baited a steel trap with a live cockroach, and fastened it to the top of the fence, and the result was a sparrow in a few minutes; and I have proved on several occasions since that a sparrow will leave corn or bread or even bird-seed mixture, and take the cockroach in preference to either. Here we keep a pair of grey owls in confinement, and to provide them with a daily meal needs much forethought and patience, and during the three years they have lived, the steel trap has taught me many things. Twice I have baited it with a shell snail, hoping to catch a thrush, and have bagged a hedgehog; and whatever may be said for or against, I can assert that hedgehogs eat shell snails with avidity. W. Gosling, *Bournemouth.*

HOW SYNONYMS ARE MANUFACTURED.—I was very pleased to see in your issue of Sept. 7, p. 190, Mr. R. Dean calling attention to the unfortunate system that allows flowers, &c., to be certificated under new names. The Talip Lique in question was known to me under this name as far back as 1890, or eleven years ago, and I have grown it myself in my garden for six or seven years. I was more than surprised to hear that when Mr. Dean made a protest it was ignored, and I cannot but come to the conclusion from observation and hearsay, that certificates are given much too freely by the committees of the Royal Horticultural Society. We hear complaints on all sides of the multiplicity of new names and varieties that have been certificated by some traders that must or should know better, and then palm them off on the public at fancy prices, and which are too often found to be old varieties under new names. To avoid this ever-increasing abuse, I should say to the Royal Horticultural Society, or to any other society, it would be well to call upon those who sent up a new thing like this, to give some history of its origin, and the names of any other varieties to which it may be near; otherwise I am sure these certificates will be looked upon by all gentlemen as of no special value, and little less than a farce, or a trick of the trade to get a fancy price from many gardeners, who are too fond of trying these so-called novelties at their employer's expense, but who would hesitate to do so if they had to pay the piper. *Robert Sydenham.*

HEMEROCALLIS AURANTIACA MAJOR.—Of this variety I planted out six examples on a border here twelve months last February (imported crowns from Holland), and this year I had four flowers towards the end of the month of July and they are still producing. The plants show a few seed pods, which I am hopeful of ripening. *Hemerocallis* seem to do best in a rich and well-drained soil. Our garden lies very bleak and cold, and has a stiff, clayey subsoil, and evidently the plants do not suffer from a cold aspect, so long as it is well-drained. *Charles Garratt, Kent.*

SILVER-LEAF IN PEACHES.—After reading the interesting article on "Silver-leaf in Peaches," in the last issue, I am tempted to relate a slight case of it which occurred here a few years ago, and which has now entirely disappeared. I do not say the treatment described below is a remedy for this insidious disease, but the treatment seemed to be successful, and this year the tree bore the finest crop of Nectarines it has ever done during my charge of the gardens, and the fruits were of a much larger size than usual. The tree is a Lord Napier Nectarine, growing on the back wall of a Peach-house. Three years ago the malady appeared on one of the branches, and I then picked off all the largest leaves that were affected, and applied to the roots a heavy application of diluted liquid manure from the cowsheds, with about half an ounce of sulphate of iron to the gallon. This and other trees had, I believe, two applications of liquid manure that

year, and one dressing of air-slaked lime, which was well watered in. The following winter, the border got the usual winter dressing, using air-slaked lime again, for the soil resting on sandstone needs frequent dressings of lime. As the season advanced the disease re-appeared, affecting a greater proportion of the Nectarine-tree, and again the tree was afforded liquid-manure copiously, and the larger affected leaves were removed. Still the disease spread, and I gave up all hope of stopping it. But this year I am glad to say not a diseased leaf has been seen. I do not claim this to be a remedy, but I merely wish to record my experience, with the hope that some other gardener will be induced to try the effect of this kind of treatment. May not this disease be brought on by the want of some vital constituents in the soil? Has this remedy ever been tried for two or three years in succession? *J. Easter, Nostell Priory Gardens.*

HARDINESS OF CRINUM CRASSIFOLIUM.—Mr. Geo. B. Mallett, in his interesting article in the *Gardeners' Chronicle* of September 21, mentions that he has not verified the reputed hardness of this species. He may therefore be interested to learn that at Cambridge it proves to be as hardy as any other kind. It is the *Crinum Van Tubergen* of the *Gard. Chron.*, August 12, 1899, p. 131 (with illustration), and to my mind is a very fine plant indeed, in some respects not equalled by any other. *R. I. Lynch.*

MANURING WITH POTASH.—In reply to your correspondent, Mr. A. Gant (September 11, p. 206), regarding the use of potash salts as manure, I cannot accept the statement that "Potash salts seldom do good, and sometimes do harm." The Rothamsted agricultural experiments were commenced in the year 1844, and have been continued up to the present time. Most of the various farm crops have been experimented with during these sixty years. Crops have been grown without manure, with farmyard-manure, and with different artificial or chemical manures, either alone or in combination. It has been the rule to apply the same description of manure to the same plot of land year after year, and to grow the same crop without any change or rest of the soil by a bare fallow. From these unique experiments, extending over such a long period of time, it is possible to estimate what a manure will or what it will not do. It is found that the effect of season has quite as much, if not more, influence as the manurial application on the final result. In 1889 samples of soil were taken from a plot of land which had grown thirty-eight crops of Barley without any manure whatever. On analysis, this soil was found to contain in its top 9 inches of depth 2,503 pounds of phosphoric acid per acre, and 36,604 pounds of potash per acre. A corresponding analysis of the soil not having been made at the beginning of the experiment, it is impossible to say what reduction has been made in these two important elements by the production of the thirty-eight crops of Barley. It is certain, however, that a very large store remained in the soil at the end of the period, but it was in a very insoluble condition. For example, the amount of phosphoric acid soluble in the top 9 inches of soil was found to be but 139 lb. per acre, and the amount of soluble potash but 94 lb. per acre. It may be of interest to state that this soil has produced an average of 15½ bushels of Barley for forty-eight years in succession, without the application of an ounce of manure. To similar soils as the above in the experiments at Rothamsted, sulphate of potash has been applied in large quantities year after year, and generally with good effect for all farm crops, but especially grass and leguminous plants. I think I may safely state that notwithstanding the large amount of potash which exists naturally in the Rothamsted soils, as is shown by the foregoing figures, the application of potash in a soluble form has never done harm, although the total yield of produce may not be so good in some years as in others. The beneficial use of potash

as a manure appears to be that it acts as one of the carriers of nitric acid to the growing plant. Consequently, when nitrate is applied to the soil in a soluble condition, such as by nitrate of soda, the soda itself acts as a carrier of the nitric acid, and does away with the need of potash. When the nitrogen is applied in the form of sulphate of ammonia, the need of potash is most distinctly marked. My own garden soil contains an abundance of chalk; the nitrogen therefore gets quickly used up, and foliage has the tendency of ripening prematurely and of turning yellow. This I have been enabled to correct, especially in fruit trees, by applications of potash, with the result that the leaves retain their dark green colour throughout the season, and the trees yield large crops of well-ripened fruit. *J. J. Willis, Harpenden.*

DIAMOND JUBILEE GRAPE.—I was somewhat surprised to see in your last issue the remarks made by your correspondent "A." in regard to this variety, and the resolution that was signed by several well-known fruit-growers at Glasgow. I, for one, thought the question as to its qualities, &c., had been fully and exhaustively discussed in your columns, and all that remained to be done was that bunches of Black Morocco Grape, together with shoots and foliage, should be staged side by side with D. Jubilee at some important exhibition. This has been done; good examples of Black Morocco with shoots and foliage being sent from Eastnor Castle gardens; and I am sure that anyone who saw the two Grapes side by side would admit that they were entirely different in character. I am convinced that the Diamond Jubilee Grape is an acquisition, and is certainly of "commanding" appearance and of "splendid" flavour. Messrs. Buchanan are to be congratulated for having put such a fine Grape into commerce. *Jas. Daves, Ledbury.*

WASPS.—I can endorse all that Mr. Roberts has stated in reference to his method of destroying wasps. I am at a loss to understand your correspondent Mr. Simpson. Mr. Simpson asked for advice to exterminate the wasps and save his fruit; he stated the large quantity of wasps' nests that he had destroyed, but the wasps were as plentiful as ever. Mr. Roberts kindly came to Mr. Simpson's aid with a remedy for the destruction of wasps. As soon as Mr. Simpson noted the remedy, he preferred to go his own way, viz., take their nests and hang bottles about containing beer, syrup, &c. That is more than I can understand, I am grateful to Mr. Roberts for his invaluable recipe, viz., 1 lb. of commercial arsenic, place in a pan and add 1 gallon of water, place on the fire and boil for twenty minutes; take off the fire, add sugar, honey, syrup, beer, &c. I followed out those instructions with good results, thanks to Mr. Roberts, and that invaluable friend in need the *Gard. Chron.*, *G. Picher, Hesselwood Gardens, Hull.* Our correspondent relates how he "brushed" some of the arsenical mixture "where the wasps were busy" in a bunch of Grapes, and that next morning dead wasps were found lying in all directions. It was also used on a Brockworth Park Pear, with equal effect. We must, however, caution our readers in the use of such a virulent poison as arsenic on fruits near the ripening stage. *Ed.*

PLANT PORTRAITS.

BEGONIA "VERNON," with variegated leaves. *Monteur d'Horvilleur, September 10.*

CALLICARPA AMERICANA.—A shrub, desirable for its purple-blue berries. In the States it is, it appears, known as the French Mulberry, because it is neither French, nor is it a Mulberry.

CEANOTHUS FENDELII.—A hardy species from Colorado, flowers white. *Andre in Revue Horticole, September 16.*

CHINESE PRIMROSE.—A form with white flowers, heavily suffused with yellow. Raised by M. Chabaud. *Revue Horticole, September 16.*

PEAR MADAME DE MADIE.—A seedling from Dehoux d'Hayfontain, raised by M. Housin de Négrib. A small Pear ripening in October, and very highly spoken of as regards flavour. *Bulletin d'Arboriculture, &c., August.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 21.—The Drill Hall on the occasion of the last meeting was filled to overflowing with flowers in season, chiefly Begonias, Gladioli, Tree Ives, Camas, hardy herbaceous perennials, Dahlias, the Cactus varieties of which contributed the bulk of the display of this flower; fruit-trees in pots, and fruit in dishes.

The attendance was much larger than on the last two occasions, and many of the visitors attended the lecture, the subject of which was "Roses for Autumn Bloom," by Mr. A. PAUL, son of the celebrated rosarian, Mr. William Paul, of Waltham Cross.

A committee of the National Dahlia Society was extended on this occasion from Fellows of the Society present in the Drill Hall, and this fact will suffice to account for First-class Certificates of this Society being in some instances awarded together with Awards of Merit made by the R. H. S. Floral Committee, an unnecessary duplication of functions.

Floral Committee.

President: W. Marshall, Esq., in the Chair; and Messrs. C. T. Drury, W. B. May, C. E. Pearson, H. Selle Leonard, J. F. McLeod, W. Howe, G. Reuther, J. Hudson, C. Dixon, C. Jellies, H. Cutbush, J. W. Barr, W. P. Thomson, G. Gordon, O. Thomas, E. H. Jenkins, G. Paul, H. J. Jones.

HERBACEOUS PLANTS, &c.

Messrs. CANNELL & SONS, Swanley, Kent, showed a grand group of "Orchid-bloomed" Camas in variety, all fine large spikes, but with no special novelty.

Mr. AMOS PERRY, Hardy Plant Farm, Wincimore Hill, N., exhibited, as usual, a numerous collection of hardy herbaceous perennials, in which Asters figured conspicuously; among them were a rosea, a very pretty lilac-purple flower of the size of a form; versicolor, rather lighter in tint; *Amellus Riverston*, *Amellus Beauty*, slightly darker; *A. latifolius*; *versicolor alba*, improved; *A. cordifolius*, small, very light lilac colour; and *A. draemeoides*; *Anemone japonica* "Whirlwind," a semi-double white-flowered variety; *Helianthus*, *Galathea Majenta* (queen, crimson and yellow; *Campsis*, *rhomboides*, hardy *Chrysanthemum Mrs. Head*, a flower white with a yellow disc, and apparently robust habit; *Knapford Midway*, and others; *Rudbeckia Jameson* and *R. submontensis*, yellow. The group contained many of the species and varieties noted in our last report (Silver Flora Medal).

Messrs. BAKER & SONS showed a similar group, but one in which *Phloxes*, *Kimphodas*, *Gladioli* of *Lemoine* varieties, early-flowering *Chrysanthemums*, *Cactus*, and *Pompan Dahlias*. Water Lilies formed the more conspicuous contents (Silver Banksian Medal).

Mr. JOHN RUSSELL, Richmond Nurseries, Surrey, made an unusually fine exhibit of Tree Ives in pots on dwarf and standards, the variegated-leaved varieties predominating. Most of the plants were showing flower, and some of them profusely so, especially *H. elegantissima*, and the *Ky-tree*. Russell's "New Gold," a pale yellow leaved variety, which is pretty, and doubtless useful. The group was semi-circular in shape, and measured 30 feet in longer diameter by 12 feet (Silver Flora Medal).

ROSES.

Messrs. W. PAUL & SON, Waltham Cross, showed cut Roses, H.P.S., hybrid Teas, Teas, Polyantha Roses, in white and pink of two or three shades of colour, *R. rugosa* in variety, everything being most prominently displayed, most of the Rose blooms being placed in baskets of moss, elevated at different heights above the table. The Tea Rose *Corallina Paul* & son formed a conspicuous centrepiece. Blooms of Roses in variety were also largely shown in show boxes (Silver-gilt Flora Medal).

Messrs. PAUL & SON, The Old Nurseries, Chesshint, exhibited what was, for the season, a very charming number of varieties of Tea, hybrid Tea, China, Noisette, and hybrid perpetual Roses. Of the latter, which were but few, we may mention *Heinrich Schultze*, Mrs. Sharman Crawford, Paul's Essex Bush, Lady Catherine, the new deep pink-coloured variety, The Teas and hybrid Teas were far more numerous, shown, the flowers generally in a beautiful condition, of good size, and nicely developed. Shoots of *Rosa lucida Vivid*, in fruit, were shown; the fruits are globose, ½ inch in major diameter, and of an orange-scarlet tint. Foliage of *R. altaica*, *R. Carolina*, *R. lucida Paul*, *R. hispida*, *R. Wichuriana variegata*, and *R. humilis* is also shown, in order to demonstrate its usefulness, when associated with flower (Silver Banksian Medal).

Cypripedium Charles Canham, C. × *Nanthe* (*ovatum* × *callosum*), C. × *Lucie* (*Lawrenceanum* × *chilolare*), C. *purpurata*, two plants of *Cattleya Gaskelliana* alba, several fine *Oncidium Papilio*, *O. ornithorhynchum*, *Milonia Regnellii citrina*, *Lobelia-Cattleya* × *Minnica* Ashlow, L. C. × *Epicasta*, L. C. × *callistoglossa*, and good specimens of *Odonotoglossum grande*, *Cattleya Leddigesii*, &c. (Silver Flora Medal).

Messrs. CHARLESWORTH & Co., Heaton, Bradford, Yorkshire, showed a good form of *Lobelia-Cattleya* × *Haroldiana* (L. *tenebrosa* × C. *Hardyana*), recently certificated to A. R. TRENKILL, Esq., and three other hybrids (see Awards).

T. W. THORNTON, Esq., Brockhall, Weedon, sent out examples of *Lobelia-Cattleya* × *Berthe Fournier* (C. *Doviana aurea* × L. C. × *elegans*); L. C. × *Ella* (L. *grandis* × C. *intermedia*), a pretty white flower, tinged with blue, and with light purple lip; and a good form of *Cattleya Leopoldi*.

Messrs. JAS. VITCH & SONS, Chelsea, showed *Lobelia-Cattleya* × *Bleichleyensis* "Iorania" (L. *tenebrosa* × C. *Warszewiczii*), a large flower with white sepals and petals, delicately tinted with rose; the showy front of the labellum was purple, getting paler towards the margin.

J. S. MOSS, Esq., Bishop's Walkham, sent a three-flowered inflorescence of *Cattleya lobata* Gaskelliana, in which the lateral sepals were marked with orange of the same tint as that in the labellum.

Mr. J. DONALD, Edenside, Great Bookham, sent *Cypripedium* × *Clytie* (*Stenocaulidatum*) with curious whitish flowers, the upper sepal striped, and the petals spotted with purple, a tinge of which colour also suffused the lip, and C. × *Youngianum superbum*.

MALCOLM S. COOKE, Esq., Tankerville, Kingston Hill, gr., Mr. Backell, sent *Odonotoglossum* × *malcolmii*, "Cooke's variety," with unusually broad segments.

Sir W. MARRIOTT, Bart., Down House, Blandford, gr., Mr. Denny, sent *Cattleya Gaskelliana* × *Eldorado*, like a large light-coloured C. *Eldorado*; and *Lobelia-Cattleya* × (L. C. × *elegans* × C. *Warszewiczii*).

WALTER COBE, Esq., Dulcote, Tambridge Wells, gr., Mr. J. Howes, showed *Cypripedium* × *Evenor superbum*, and M. M. GRIM-SHALE, Esq., showed six good examples of *Oncidium Forbesii*.

Awards.

FIRST CLASS CERTIFICATE

Cattleya Indemianum Stratford, from Messrs. STANLEY, ANDERSON & Co., Southgate. A beautiful white form of that fine *Cattleya* often called *C. eschscholiana* in gardens. The flower is of fine shape, the petals very broad, and the whole flower clear white except the disc of the lip, which is yellow, and the front lobe, which has bright purple markings between the white veining, which extends to the broad white margin.

Lobelia-Cattleya × *Maudae* Chas. Mutton (L. *Dufrenoyi* × C. *Warszewiczii* *impudens*). A noble flower, closely approaching the fine L. C. × *Dufrenoyi-Mendeli* *Veitchii* variety, illustrated in the *Gardeners' Chronicle*, Sept. 11, p. 267, and not showing the indication of C. *Warszewiczii* to be expected. The flower was very large (8 inches across), of an uniform light purple-rose with a large greenish-yellow disc to the lip, which was finely fringed. Indication of fringing also appeared on the petals. The award was given subject to the flower being available for painting according to the Society's rules.

AWARD OF MERIT

Lobelia-Cattleya × *predansibitor* (L. *pauciflora* *peruviana* × C. *biolor*). From Sir TRAYOR LAWRENCE, Bart., Burford, gr., Mr. W. H. White. Flowers of fine shape; sepals and petals bright rose-lilac; lip broad, and extended on an isthmus, as in C. *biolor*; and of bright ruby-purple.

Lobelia-Cattleya × *Galatea* (L. *Dayana* × C. *cruciatula* *Schofieldiana*). From Messrs. CHARLESWORTH & Co., Heaton, Bradford. Sepals and petals light purple, with a glossy surface; lip pale rose at the base, the tips of the side lobes, and the elongated front lobe dark purple.

Cattleya × *fulvacea* (*Trichostema* × *aurea*). From Messrs. CHARLESWORTH & Co. Pretty in form and novel in colour; flowers somewhat resembling C. *Minnica*, but of a peculiar pink tinted yellow, the disc of the lip being rich orange, with a delicate freckling of purple-rose in the centre.

Cattleya × *Tris* (*biolor* × *Doviana aurea*), from Messrs. CHARLESWORTH & Co. A striking flower with the sepals and petals greenish, with a bronzy tint. Side lobes of the lip short and lobed over the base of the fleshy column as in C. *biolor*, bluish-white, front lobe

on an extended strap-like base, rose-purple, with the whitish ground colour showing through the surface colour.

BOTANICAL CERTIFICATE.

Mormodes Oberlanderiana, from Sir TRAYOR LAWRENCE, Bart., Burford, gr., Mr. W. H. White. A discovery of Consul F. C. Lehmann, described and illustrated in the *Vegetables Chronicle*, November 3, 1900, p. 28. Sepals and petals yellowish, with small purple spots; lip: cream-white with dark spotting on the lower portion.

Odonotoglossum Wallisii, from Sir TRAYOR LAWRENCE, Bart.—A pretty, small-growing species, originally discovered by Wallis on the Sierra Nevada in 1808. Sepals and petals yellow, marked with brown; lip white, with usually rose-purple blotches. The plant shown had nearly all the flowers with white labellums (O. *purum* Reich, l.), but as has previously been proved, this character is not reliable, as in former cases an occasional flower having a rose-purple blotch on the lip has been observed.

Odonotoglossum bicolorianum album, from Sir TRAYOR LAWRENCE, Bart.—Sepals and petals greenish, barred with brown; lip pure white. The normal form has a rose-tinted lip.

Fruit and Vegetable Committee.

Present: Mr. G. BUNYARD, Chairman; and Messrs. A. H. PEARSON, G. WOODWARD, W. FARR, W. BATES, A. DEAN, G. KEIF, H. MARKHAM, J. WILLARD, J. JACQUES, G. T. BILES, J. SMITH, G. NORMAN, W. POUPART, J. CHEAL, S. MORTIMER, M. GLEESON, and the Rev. W. WILKS.

Mr. BAXWELL sent from Worthing, dishes of Tomatoes, Chiswick Peach and Orchard, and of the Perfection type. All excellent examples (Vote of Thanks).

From Mr. SLADE, gr. to Lord POLYCOMBE, Exeter, came very fine samples of *Triomphe de Vienne* Pear. One of the fruits out was found to have a divergent centre, an unfortunate characteristic of that as well as some other fine-looking Pears (Vote of Thanks).

Mr. F. M. BRADLEY staged dishes of a handsome, flatish, white Kidney Potato named Lord Roberts. The exhibitor was asked to have some tubers sent to Chiswick for trial next year.

Mr. J. HITCHCOCK sent from Gumburney House Gardens, a smallish-white Grape named Early Aventure Frontignan, berries round, the bunches long and tapering. The berries were sweet and juicy, but seemed to lack flavour. From the same source also came a fine scarlet-fleshed Melon named "Leopold of Rothschild." The flesh was thick and soft, with the exception of the outer part which was hard. May be seen in better condition next summer.

From Mr. PETERS, gr. to H. P. STRICKS, Esq., Givons Grove, Leatherhead, came a single bunch of the round-berried form of Gros Maroc Grape, and two bunches of a long, oval-berried variety he had named "Givons Gros Maroc." The round berries were yet unripe, and very pleasant eating; the oval berries were yet unripe, and rather acid. Some doubts existing as to whether Gros Maroc under both forms was in commerce, hence it was a good deal to see the Grape again on October 15. It is worthy of note that both Mr. A. F. BARRON and Mr. Hoeg describe Gros Maroc as having oval berries, also as being identical with Cooper's Black; but Gros Maroc is commonly shown having round berries. Evidently two distinct forms are in commerce under this name, the round one, as in this instance, being earlier and sweeter than the other.

Messrs. W. PAUL & SONS, Waltham Cross, sent dishes of Humboldt Nectarine, and Royal George, Sea Eagle, Barrington, and Princess of Wales Peaches, from standard trees outdoors, fairly well ripened, but not much coloured (Vote of Thanks).

From Mr. D. THOMAS, of Luppeter, came a dish of Apples not unlike King of the Pippins, but much earlier, named Card; these were over-ripe.

Mr. W. FARR, gr. to A. PEARS, Esq., Isleworth, had a scarlet-fleshed Melon "Centre of England," which was a few days over-ripe.

Mr. DYCERS, gr. to the Duke of RUTLAND, Belvoir Castle, sent Plum Divers' Late Red, of the size and form of Jefferson, but very pale red. It seemed to be lacking in flavour.

Mr. F. WALDEN, gr. to Col. WARDE, Barham Court, Kent, set up no less than twenty-five fruits of Melon Hero of Locking, all very even in size, colour, and netting, and showing a remarkably even, true streak (Silver Bankstan Medal).

Mr. FARR set up a very fine collection of fruit, including good Apple Towers, Gros Maroc, Madresfield Court, black; and Muscat of Alexandria, white Grapes, twelve excellent bunches in all. Also dishes of Peaches Sea Eagle, Nectarine Princess of Wales, and Marquis of

Downshire; and of Elruge Nectarine, Plum Golden Drop, Grand Duke, Jefferson, and Monarch; fine Morello Cherries, good Damsons and Medlars. Also eighteen dishes of Apples, including fine Warner's King, Gloria Mundi, Peasgood's Nonsuch, Lord Salford, Transparent, &c.; and nineteen dishes of Pears, amongst which were the Fondante d'Autonne, Doyenné Boussouche, Marie Louise d'Ucle, Marguerite Marillat, Emile de Heyst, and others (Silver-gilt Knightian Medal).

A capital collection of some forty-eight dishes and baskets of fruit came from the HORTICULTURAL COLLEGE, Swanley. There were superb samples of Peasgood's Nonsuch, Bismarck, Warner's King, Pott's Seedling; also good Worcester Pearmain, Councillor, The Queen, King of the Pippins, Cox's Orange, Scarlet Nonsuch, and Yellow Ingestre. Of Pears, Doyenné Nonsuch, and Yellow Ingestre, Louise Bonne, Pittanost Goodrich (richly coloured), Louise Bonne, Pittanost Duchesse, Beurré Diel, &c., were capital. Also of Plums, Kentish Bush, Damson, Blenheim's Scarlet, and others, with the Morello Cherries, Blenheim's Knightian Medal.

Mr. G. KEIF, gr. to Miss ANASTON, South Lodge, Regent's Park, put up a very extensive and representative collection of vegetables, literally grown in London, including several varieties of Onions, Turnip-rooted and tapering Beets, Golden Jubilee, Princess of Wales, Polegate, Perfection, Sunbeam, and Red Desert Tomatoes; fine Parsnips, Intermediate Carrots, Leeks, Vegetables-Marrow, Best of All and Prize-winner Vegetables-Beans, Warwick Kidney Beans, Autocrat Peas, fine purple Aubergines, various white and Savoy Cabbages, Kale, and other things, making a total of fifty varieties (Silver Bankstan Medal).

From Messrs. CANNELL & SONS, Swanley, came several dozens of their handsome Defiance Cabbages, perfectly headed, and of the most even description. The hearts are of medium size.

Messrs. RIVERS & SONS, Sawbridge Wood, set up an interesting collection of Plum-trees in pots, including Monarch, Primrose, Pond's Seedling, Cox's Golden Drop, Golden Transparent, and Jefferson. Also there were numerous baskets and dishes of fine fruit of Autumn composite, Grand Duke, Wyodale, President, Late Black Orleans, Autumn Beauty, &c. (Silver Knightian Medal).

The Lecture.

The customary general meeting of the Society was held in the afternoon under the presidency of Dr. Masters, in the course of which a lecture on "Roses for Autumn Blooms" was delivered by Mr. Arthur William Paul, of Waltham Cross. The lecturer commenced by reminding his hearers that the era of autumn-blooming Roses commenced with the introduction of the Chinese Rose from the East at the end of the eighteenth century, prior to which time the Roses in English gardens were almost exclusively summer-flowering varieties. Hence with the earlier poets and painters the Rose is linked with associations and sentiments of early summer—the quotation from Shakespeare's *Love's Labour's Lost* need not to prevent that Roses in winter were unknown in list-tinted whetters, at the present time, Gloire de Dijon and other autumnals in sheltered situations flower up to Christmas, and even beyond.

After alluding to the desirability of autumn-flowering Roses for country gardens, where the owners are usually in residence at that period of the year, Mr. Paul went on to point out the improvement that has taken place in this particular class of Roses during the past twenty years. The Chinese, Tea-scented, and Hybrid Teas at the present time furnish the most valuable varieties for the purpose, but the Hybrid Perpetuals and Bourbons are also good; whilst the rugosa, microphylla, Macartney, and other autumnal species are valuable for special soils and situations. With a passing allusion to the special climatic conditions which sometimes caused certain summer-flowering varieties to flower in autumn, Mr. Paul proceeded to give cultural directions for the various classes referred to, insisting strongly upon due regard being paid to the manuring of the plants by annual dressings of manure in winter, and recommending attention to certain details of culture for the improvement of the autumn flowers. Planting Roses in groups or masses of one kind was also recommended in preference to mixing varieties in the beds or borders, greater regularity of growth being thereby ensured, with a correspondingly better effect in the garden.

Mr. Paul then proceeded to give a list of the best varieties for autumn flowering, grouping them in four divisions, according as the growth is dwarf, moderate, vigorous, or climbing. Some of the varieties recommended were Corallina, G. Nabonnand, Comtesse Festetics Hamilton, Enchantress, Madame C. P. Strassheim, Papa Goutier, Souvenir de Catherine Guillot, Ella Gordon, Belle Siebrecht, La France, Camoens,

Caroline Testout, Gruss aus Tepitz, Madame Jules Grolez, Marquise Litta, and Madame Abel Chateau; the Chinese varieties, Queen Mab, Madame Laurette Messimy, Cramoisi Superieure, and the dwari Polyanthus Perle des Rouges and Gloire des Polyanths.

The lecture concluded with a notice of appreciation of what is being done by raisers to ameliorate and increase the number of autumn-blooming Roses, especial allusion being made to the new hybrid Briar. Soleil d'Or, and the seedlings from the free-blooming varieties of the French Riviera, which are being raised at Waltham Cross.

In the discussion which followed, Dr. MASTERS alluded to the scarcity of autumn Roses this year in his own garden at Ealing, mentioning Belle Lyonaise as almost the only variety that was flowering well; this Mr. Paul thought must be due to local causes, Dr. Doig gave voice to a complaint which has been only too prevalent on the lips of rosarians this year as to the persistent recurrence of mildew on the plants, brought on no doubt by the great difference at times between the day and night temperatures, and encouraged by the lengthened spells of drought, Mr. Douglas also touched upon the same subject, and made further remark upon Roses suitable for walls with a northern aspect, in which position he stated he had found William Allen Richardson to do well.

THE NATIONAL DAHLIA SOCIETY.

A very fully attended meeting of the committee was held at the Horticultural Club, on Tuesday afternoon, to consider the Society's position. The chairman, Mr. E. Mawley, reported that £90 had been received from the Crystal Palace Company for the show of last year, but that no other amount would be paid over the recent show. It was agreed that amateurs' prizes be paid in full, and the florists' prizes pro rata, provided the finances did not admit of them being paid in full. Interviews had taken place with the Royal Horticultural Society's council with respect to holding next year's show at the Drill Hall, and with the directors of the Royal Aquarium, Westminster, with a similar object. Neither offer seemed to be satisfactory. A proposal to hold the show at Gurnersbury in the beautiful grounds there was warmly welcomed, but all suggestions were left over for future consideration by a meeting to be held a month later.

BRITISH ASSOCIATION.

GLASGOW, SEPTEMBER 11, 1901.

BOTANY: S. DODD.

THE TRANSPORT OF BRITISH TIMBER.

In this country it costs about 1d. to grow a cubic foot of Fir timber. On the average, it costs about another 5d. or 6d. to get it into the market, and it sells there for 8d. to 9d. per cubic foot. The chief reason why it sells for less than cost price is, that foreign Fir is sold at the figure specified, and the growers and importers can make it pay. I have selected Fir as an example, in order to emphasize the fact that the handling charges on our home-grown timber are much higher than those on imported timber of the same species. We can grow Scots Fir and Spruce practically as cheaply as the continental forester, but we cannot afford to sell it at the same price, and at the same time compete on equal terms with him, because it costs us more to transport it from the plantation to the consumer, sometimes even when both are in the same country, and until we are able to direct the same efforts of our scientific botanists to produce good and cheap timber are greatly spoiled by the hard facts of &c. &c.

This you will say is an old story about all native produce. Yes! But because of its bulky nature it is more ruinous in relation to native timber than, say, to home-grown corn, because of its greater handling charges in proportion to its value. A ton of Wheat is sold for, say, 46 15s. of this 15 per cent. 6s. or 7s. will be paid for cartage and railway carriage. But a ton of Spruce sold for 35s. will cost 25s. or 30 per cent. for cartage and carriage. A ton of Spruce grown in a Baltic country will cost in transport, from the forest to the consumer here, about 10 per cent. of its selling value, and a ton of Spruce grown in Canada very little more.

Of course, the discrepancy and extra cost do not seem so great proportionately on the value of the higher-priced timbers. But these take longer to grow, and except in favourable surroundings, the final results are about the same. There is little commercial encouragement to produce timber if there is no reward but that which virtue is said to bring.

Preferential railway rates in this country are costing timber growers nearly as much as the rental value of the land on which the timber is growing. Why is there this great check upon the efforts to make "forestry pay"? One reason is, that our foreign timber

imports are handled generally in larger quantities, so that detail work is done more cheaply.

But it is not only in railway charges that our expenses are higher. The overland carriage-costs us more. We have not the advantage of water-roads and growing seasons, or sufficient snows and frosts to make water or ice a generally available means of transport. Can these overland routes to railway-handling charges be reduced? I have made some enquiry about tramways and other mechanical appliances, but do not see any advantage to be gained from them under the conditions ruling in this country. The chief drawback to their use is that our small and scattered plantations are not well adapted for employment of costly plant and machinery for transport. A tramway cheap as it is in working is costly in instalment, and although it would effect considerable reduction in the cost of transporting a large lot of timber grown in a suitable environment, and could be used again under similar circumstances, it would, in a large number of cases, be much dearer than the present system of removal by horse waggons. Besides, public roads would have to be used and crossed, and County Councils would not be ready to allow this.

Under favourable circumstances, again, traction engines would effect considerable economy in haulage. A load of 12 or 15 tons might, on some roads, be carried for less than one of 3 or 4 tons drawn by horses, but the good roads do not often penetrate into the woods, and there are weak bridges, and sharp corners to contend with, which would not be "negotiable" with long, heavy loads, such as would be required to use the full available power. The pole-waggon as at present in use, drawn by horses, are the best appliances at present in existence for collecting timber from our comparatively small timber areas in the first instance.

But if we could have partial conversion of the timber at centres close to large areas of timber, we could considerably cheapen the cost of transport, both by using traction engines and tramways for the local work, and traction engines for "through" traffic to reasonable distances.

It is easy to complain of the inequalities of railway companies in charging more for carrying native produce than foreign; and there is considerable reason for the complaint, especially under the present chaotic system of measurement, and the newly insisted-on wharfage charges. But the question is not a one-sided matter. There is no denying the fact that native timber does, on the whole, cost somewhat more to transport than foreign. It is often in clumsy, dangerous forms, crooked and knotty, whilst imported timber is generally shoddy or partly converted into tidy, straight pieces, making more compact and firmer loads. Being dealt with at ports in larger quantities at a few yards, and of the wood is centralized and specified, with the result that there is a large saving in detail.

Railway managers are practical business men who cannot afford to do work on philanthropic principles, and they see this difference in the nature of the two classes of merchandise, but at the same time we have no practical indication that any effort is made by our home producers, and their loads to centralise their work, make their timber more compact, and at the same time to make their consignments of railway companies will make their charges equal those for imported timber. Straight and crooked, large lots and small, compact loads and light ones all are charged at the same rate.

The question is a large one, and its importance is not sufficiently realized by those who are most affected by it, namely, growers of timber.

While persevering in the efforts which have been made of late years to improve our forestry, it behoves growers to pay special attention in future to the relation of transport to concentration of production, the producing of timbers of the higher values, compactness of loads, and regularity of supply of consignments. Special Merit.

BOSTON AND DISTRICT DAHLIA.

SEPTEMBER 12. Boston does us great credit for its locally grown Dahlias. It is so that many amateurs and cottagers at Boston are cultivating the Dahlia for exhibition, and the entries in the section of classes open to such exhibitors proved the truth of the foregoing statement. A few among the cottagers cut their blooms a little too old, which accounted for the defective centres seen here and there. The bulk of the show is made up of the contributions to the classes open to all comers, as several of the leading growers in the south took their blooms to Boston.

In the class for twenty-four blooms, show and fancy, Mr. J. WATKINS, Thame, came in 1st, with flowers decidedly more perfect than those seen at the Crystal Palace. Chief among them were Victor, Dr. Keynes, R. T. Rawlings, J. T. West, G. Rawlings, Shotts-sham Hero, Mrs. G. R. Telford, Mrs. Greaves, Buffalo Bill, Rev. J. B. M. Gunn, &c. Mr. S. MOREIMER, Faruham, was close 2nd, also with very good blooms, and Messrs. G. HUBBERTS, Chippingham, and SEALE, Sevenoaks, were placed equal 3rd.

With twelve varieties, Mr. G. HUBBERTS was 2nd, and Mr. J. WALKER 2nd.

The class for twelve bunches of Cactus, six blooms of each, brought a very spirited competition, and Mr. S. MOREIMER was placed 1st with superb examples of Viscountess Sherbrooke, Zephyr, Floradora, John Burn, very brilliant crimson; Mrs. Carter, Page, Spitzire, very bright pale red; Uncle Tom, Mrs. J. J. Crowe, Loric, and J. F. Hudson. Mr. J. WALKER came 2nd; he had Canary (new), soft yellow; Lord Roberts, bedouair, Mrs. Carter, Page, J. W. Wilkinson, and Lucius, all very fine. Mr. SEALE was 3rd.

The class for twenty-four blooms of Cactus Dahlias shown on boards, brought several exhibitors, and Mr. S. MOREIMER was again 1st with fine blooms of the leading varieties, John Burn being particularly fine. Mr. J. WALKER was 2nd, and Mr. W. BAXTER, Worthing, was 3rd.

Mr. MOREIMER was also 1st with twelve varieties; and Mr. WALKER 2nd.

In the class for twelve blooms of Cactus, three blooms in a bunch, Mr. W. BAKER was 1st, with a very good collection.

Twenty Dahlias were admirably shown by Mr. SEALE, the flowers medium sized, fresh and even, the leading varieties were Doris, Donovan, Jessica, Daisy, Gany-mede, Douglas, Phoebe, Tommy Keith, &c. Mr. G. HUBBERTS was 2nd, and Mr. J. WALKER 3rd.

Some very fine vases of Cactus Dahlias were shown by Messrs. WALKER, SEALE, and MARTIN. Very good flowers were shown by amateur and cottagers, and the competition generally was keen.

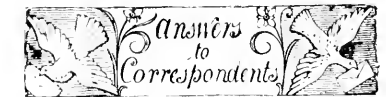
A very nice contribution of Dahlias, mainly Cactus, and inclusive of some very fine new varieties, was staged by Mr. J. GREEN, Bercham (HOBBS & CO.), and the medal of the National Dahlia Society was awarded to him.

Messrs. H. H. SMITH & Co. had cut flowers of many kinds; Mr. E. J. W. DISBROW, had fine Pent-stemmed, &c., and Mr. T. B. DODD had Dahlias; all being local enterprises.

The leading exhibitors formed a committee, and awarded Certificates of Merit to the following Cactus Dahlias: John Burn (Moreimer), Canary (Walker), Mrs. E. Needs (W. Baxter), Queen of Hearts and Sash (H. H. Smith & Co.), and to the following single plants: Beauty of Sevenoaks, Maid of Athens, and Royal Sovereign, from Mr. SEALE.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.

SEPTEMBER 17. There was a good attendance of members at the Society's Room at the Sunflower Temperance Hotel on the above date, when an excellent paper by Mr. E. Laxton, the Strawberry Specialist of Bedford, on "Strawberries, dealing with the history and botanical characteristics of species and their geographical distribution, hybridation, and exhibitions from the wild species, the cultivation both indoors and out of doors. A unanimous vote of thanks to Mr. Laxton closed the reading of the Paper.



ADDRESS OF SECRETARY OF ROYAL CALLEDONIAN HORTICULTURAL SOCIETY: T. S., and others, P. Murray Thomson, 5, York Place, Edinburgh.

REVEREND DR. PEAR: W. D., Canon Hill. Kindly send fruits, foliage, and shoots for our inspection. We cannot tell from your statement what is the cause of the loss of fruit.

BOTANICAL BOOKS: J. L. Elementary Structural Botany, Scott, 2 vols. (A. Black & Co.); Elements of Botany, F. Darwin (Cambridge University Press); Practical Botany for Beginners, Bower (Macmillan); A School Flora, W. Marshall Watts (Rivington); Plant Life, Masters (Vinton & Co.). For more advanced students, Vines' Students' Text Book (Swan, Sonnenschein & Co.); J. R. Green's Introduction to Vegetable Physiology, Churchill; besides very numerous little handbooks intended for use in laboratories.

BOLIVARIAS: X. Y. Z. The collapse of Bolivarias is entirely caused by having been too much rushed or forced. Similar material is constantly appearing, and repeated examination has failed to reveal any animal and plant parasites. G. M.

CAMELLIAS IN A VERANDAH: *H. J. B. Watford.* In a mild winter the verandah would afford sufficient protection if the roots are packed in dry tree-leaves or short litter. If the weather should prove very severe, the verandah might be covered with mats, or the plants themselves be covered with them, or dry straw or bracken tucked in among the branches.

CATERPILLAR: *W. Gibson.* The caterpillar of the peppered moth, *Amphidasis betularia*. A very interesting but fairly common insect. The larvae are variable in colour, and as a rule imitate perfectly the colour of the surrounding shoots of their food plant, being dark brown, or almost black on Birch, and green on such plants as *Pelargonium* and seedling *Laburnum*.

CATERPILLAR IN POPLARS: *Nurseryman.* What you send is the caterpillar of the Goat Moth. If they are so abundant as you say, we fear that you can do nothing but burn the trees. You might try cyanide of potassium. Make a saturated solution of the cyanide in water, soak some cotton-wool in it, and thrust it in the holes of the trunk of the tree; but remember you are dealing with a most virulent poison, and be careful accordingly.

ELM-TREE DECAYING: *Chas. Fulton.* The injury is caused by the Elm-bark beetle, *Scolytus destructor*. From your description of its effects on the tree, the latter is past all help. It would be well to fell the tree, strip it carefully of the bark, burning it forthwith, and to dress the ground where the operations have been carried on with lime (gas-lime by preference), or the beetles may spread to neighbouring trees.

EU-XYMUS JAPONICUS ALBO-MARGINATUS. *Alpha.* It may be struck from cuttings but at this season in sandy soil under a hand-glass or cloche out-of-doors, in pots in a cold frame; by layering in about a year; and from cuttings taken in the spring from plants hastened in heat, and struck on bottom-heat. Half ripe shoots, with or without a heel, will strike under hand-glasses on a spent hot-bed.

GRAPES CRACKING: *E. F. Studd, Oxtou.* The berries have cracked as several varieties will do, unless very carefully managed after stoning, and the common mildew has grown upon the exposed pulp. Grapes liable to this mishap should be kept rather drier at root and top, and ventilation at night afforded.

GRASS ON LAWN: *Rus-in-Utbe.* *Agrostis vulgaris*, or *A. alba* (Fiorin grass). There is not much in such specimens to say which, but from the length of the ligule I believe it to be *A. alba*. Anything applied to the land which would kill this plant would kill other grasses as well. If it is only in places in the lawn, it should be pulled or dug up. If it is in any quantity the lawn had better be broken up thoroughly, cleaned of all fragments of this grass, for any fragment will produce a new plant, and then sown with suitable and clean seeds, from which Fiorin is rigorously excluded. *W. C.*

INSECT EGGS ON OAK-LEAF: *X. Y. Z.* The batches of eggs on Oak-leaves are those of a species of *Geometra* Moth.

IVY ON A HOUSE: *Alpha.* Provided it is kept close to the walls by an annual pruning in March or early in April, and is not allowed to get under the eaves, Ivy shields a wall from rain and snow, and its clinging roots draw all moisture out of a wall. We should doubt the capability of Ivy to make a wall dry if there are no eaves or coping.

MAGGOTS IN BUBBED APPLE STOCKS: *X.* Undoubtedly a species of *Cecidomyia*, related to the gall-gnats, of which several species are known to infest Willows, causing spindle-shaped swellings upon the twigs. The Hessian-fly (*C. destrector*) is also another member of the same family. *R. N.*

MUSHROOM: *Henderson, Breechin.* The Horse

Mushroom, *Agaricus arvensis*.—*O. H. A.* It is not uncommon to see Mushrooms growing one on the other in a reversed position; but not so easy to say why.

**** NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such demands generally involve some inconvenience, and a large expenditure both of time and money on our part. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: *A. S. Crofton* Scarlet; the Apple is reputedly of Irish origin, but it is not often seen now, either in England or Ireland.—*J. B. D.* Apple Queen Caroline, but this should not be confused with Caroline, which is a superior and somewhat later variety; the Plum is Diamond, a Kentish variety, useful for its prolific bearing.—*T. W. S.* The Apple is Nonesuch, frequently seen in old books as Nonsuch, but there is good reason for doubting if the Apple usually known under this name is that originally mentioned in the seventeenth century. The diminutive Pears sent are unknown, and are much inferior to many varieties in cultivation. We have seen hundreds of such varieties of local origin, neither worthy of names nor of cultivation.—*D. S.* Hawthornden; the true old type, also known as the White Hawthornden, all quite distinct from both the New and the Winter Hawthornden, though all three names are sometimes confused.—*F. C.* A small example of Castle Major, which may be found in many southern orchards.—*H. F. G.* Apples: 1, Margil; 2, Stirling Castle; 3, Sam Young; Pears: 1, Summer Crassane; 2, Beurre d'Amalris; 3, rotten, and unrecognisable.

NAMES OF PLANTS: *H.* *Eponymus latifolius*.—*W. Gibson.* *Datura Stramonium*.—*Delayed.* 1, *Quercus rubra*; 4, *Cupressus torulosa*; 5, *Juniperus virginiana*.—*G. M.* from last week. 5, *Cupressus macrocarpa*; 6, *Pinus Montezumae* perhaps, but without cones we are uncertain; 7, *Juniperus sphaerica*; 8, *Cupressus torulosa*.—*James Corke.* *Escallonia macrantha*.—*R. C. T.* *Molueella levis*, native of the Mediterranean region, introduced into Australia.—*Kranthild.* *Ceanothus azureus*.—*A. G. G.* 1, *Cattleya Loddigesii*; 2, *Miltonia spectabilis* Moreliana, often called *Miltonia Moreliana*.—*J. R. Ball.* *Agaricus (Lepiota) radiatus*, very good eating.—*Constant Reader.* A single flower sent in a thin wooden match-box crushed in the post, the flower withered, and its sticky remains enveloped in cotton wool. We are sure that the flower is one of the Mallow family, and we, with some daring, guess it may have been an *Abutilon*.—*G. D. J.* Your Aster is killed by a parasitic plant, the Dodder.—*W. P.* 1, *Veronica spicata*; 2, *Polygonum Brunonis*; 3, *Melilotus officinalis*; 4, *Hedysarum coronarium*.—*G. S.* *Cratageus coccinea*.—*W. J. W.* *Solanum nigrum*.—*H. B.* *Centaurea nigra*.—*H. E. C.* 1, *Skimmia Fortunei*; 2, not recognised; 3, *Osmanthus ilicifolius*; 1, *Erica arborea*; 5, *Symphoricarpos racemosus*, Snowberry; 6, *Pernettya mucronata*.—*J. M.* *Nottingham*. 1, *Panax Victoria*; 2, *Panax laciniatum*; 3, *Codiaeum (Croton) irregulare*; 4, *Achimenes purpurea*. The other two are hybrid greenhouse *Rhododendrons*, but they their names are we are unable to say.—*Oxon.* 1, 2, 3, are all forms of *O. ontoglossum* Lindleyanum; 4 seems to differ, but the flowers are not fully formed. It resembles the slender form of *O. odoratum*.—*Lanashire.* 1, *Neprolepis rufescens*; 2, *Microlepis (Davallia) platyphylla*.—*A Subscriber, Worksop.* 1, *Athyrium filix-femina*; 2, *Polystichum aculeatum*; 3, *Polystichum angulare proliferum*; 4, *Polystichum angulare*; 5, *Asplenium Adiantum nigrum*; 6, *Lastrea filix-mas*.—*E. J. P.* 1, *Clethra alifolia*; 2, *Pinus Laricio*.—*F. M.* *Genista tinctoria*, *Elaeagnus angustifolius*.

PEARS: *H. S. W.* See answer to "H. B.," p. 236, in our last issue.

PUMPKIN: *J. M. S.* Botanically there is no difference between a Pumpkin and a Gourd.

RAIN: *Alpha.* See our issue for 14th inst., p. 216.

SITUATION IN A LONDON PARK: *Parks.* You should apply by letter, stating your desire for employment, and mention your qualifications and experience, age, number of situations, &c. Usually men are taken on in the spring, and not at this season when the staffs are usually not increased in numbers. There are nineteen Superintendents, whose names are given in the *Horticultural Directory* for 1901, published at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C.

COMMUNICATIONS RECEIVED.—*A. P.*—*N. E. R.*—*H. J. M.*, photographer, with thanks.—*R. A. C.*—*E. M. T.*—*J. M. S.*—*S. M.*—*T. K. S.*—*J. Rasen*—*K. E. S.*—*J. L.*—*J. H. B.*—*C. Dennis*—*W. E. B.*—*Grenada*—*C. A. Y.*—*N. E. R.*—*W. M.*—*W. E.*—*Constant Reader*.—*F. B. & Co.*—*C. Hatfield*—*F. Brown*—*W. Noakes*.—*E. F. N. G.*—*C. Liddard*—*T. K. C.*—*W. A. H.*—*Woodward*—*Austin & McAslin*—*Jno. J. B.*—*W. H. D.*—*Lee*—*A. Reynolds*—*F. T. Mott*—*P. Rose*.

DIED.—We regret to announce the death on Friday, September 20, at the age of seventy-two years, of Mrs. H. APPELEY, wife of Mr. Appley, nurseryman, of Dorking, Surrey.

CATALOGUES RECEIVED.

L. SPAHL, Baumshuleweg, near Berlin.—Trees, Fruits, Shrubs, Roses, Amaryllis, Small Fruits, Herbaceous, Biennial Plants.

KEFEN FIRM at Luxembourg—New Roses, ready for delivery November 1, 1901.

H. J. LOW & Co., Enfield, Middlesex.—Plants, Shrubs, Trees, &c.

SOCIÉTÉ ANONYME DE BOUTAUX, TOURCOING, Nord (France)—Palms and Decorative Plants.

J. DE COCK, Villa des Lauriers, Meirbeke, near Ghent.—*Azalea indica*, mollis, and pontica, *Aspidistra*, *Dracena*, *Begonia tuberosa*, *Agaveca spicata* and *A. glauca*, Palms for decoration and to store pots, Lauris nobilis.

LAING & MAHER, Kelso, N.B.—Carnations, Picotees, and Phlox.

WEBB & SON, Wordsley, Stourbridge—New and Improved Cereals.

BULBS.

SMITH & SIMONS, 36, 38, West George Street, Glasgow.

GARDENING APPOINTMENTS.

MR. H. WOODGATE, for the past five years Head Gardener at Thornham House, Clapham Park, as Head Gardener and Bailiff to E. L. COLES, Esq., M.P., Highfield, Shoreham, Seacombe. He entered on his duties September 22.

MR. JAMES WILSON for the last four and a half years Gardener at Naworth Castle, Carlisle, as Gardener at Plinton Hall, Bungay, Suffolk, entering on his duties on October 2.

MR. WM. FROST, for the last six and a half years Head Gardener at Godinton, Ashford, Kent, as Head Gardener to Mrs. ALFREY, Williamstrip Park, Farnham, Gloucestershire.

MR. WM. GRESTON, Foreman at Broadlands, Ascot, as Gardener to CHARLES TROTTER, Esq., Barton Manor, Buckingham.

MR. J. RITCHIE, for the last five years Gardener at Woolmer Hill, Haslemere, as Gardener to Mrs. STEWART HOBSON, The Manor House, Haslemere, Surrey.

MR. THOMAS SHARPE, late Gardener at Clemond House, as Head Gardener to R. W. MALING, Esq., Twizell House, Belford, Northumberland.

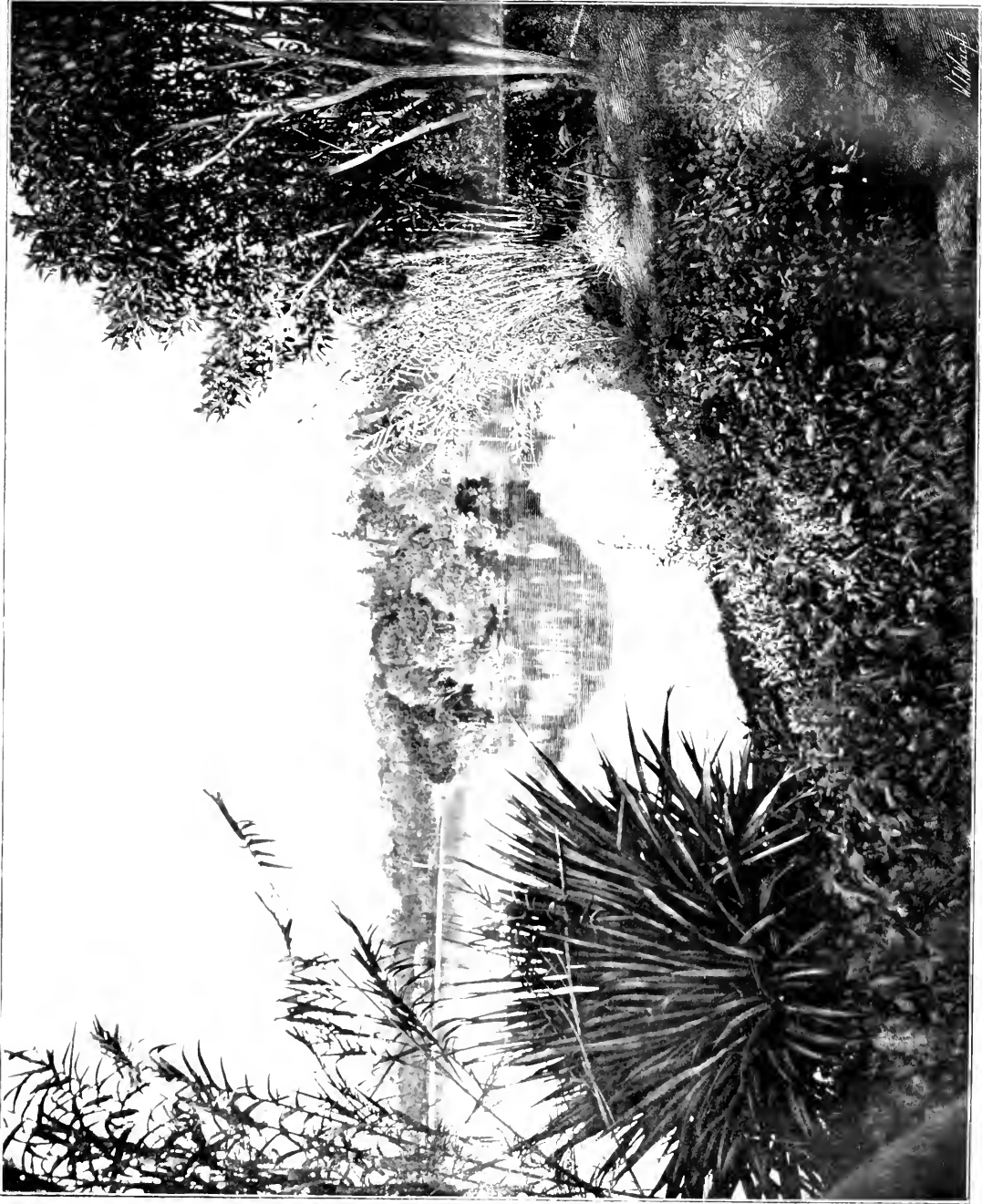
Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

40% TREBLED. 43

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

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



VIEW IN THE MELBOURNE BOTANIC GARDEN



THE
Gardeners' Chronicle

No. 771.—SATURDAY, OCT. 5, 1901.

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BACK AT JOHANNESBURG!

JOHANNESBURG once more, after nearly a year and a half of enforced exile at Port Elizabeth. On the journey up little was to be seen in the way of vegetation, the end of June being midwinter; but perhaps a few rough notes may be of interest.

Leaving frostless Port Elizabeth, the railway passes for some 60 miles through dense bush, where elephants still subsist. Crimson-flowered *Aloe* and *Trogon capensis* are in bloom, while a few *Oxalis* begin to unfold their brilliant flowers. Mounting higher, toiling up the Fish River valley, an armoured train preceded us; all honour to those brave men who man it; and to the driver and fireman of our train, as rebel Boers still lurk here and there in the fearful masses of Prickly Pear, *Opuntia vulgaris*, which has gained the mastery of the native bush over a vast tract of the Karoo veldt. Brother Boer tried to blow up our train, but his little game failed. Very much of the interior of the Cape Colony is so rainless that even *Eucalypti*, where not irrigated, simply perish from drought.

Crossing the Orange River over the vast bridge at Norval's Point, we enter the Orange River Colony, and grassy plains then begin to appear, to the exclusion of the small, dwarfed bush so typical of the Karoo veldt. Nearing Bloemfontein, the flat-topped mountains recede into the far distance, and we see nothing on each side but enormous flat plains covered with "Rooi" grass, *Anthriscia ciliata*, good for sheep and cattle.

The soil is often good, and varies from a heavy black loam to a brown, red, or whitish sandy loam, generally free from stone, and of a good depth. Farms have the everlasting Weeping Willow planted round them, and only at one homestead did I notice some healthy young *Pinus insignis*. Bloemfontein was passed at night. Lombardy Poplars and *Eucalyptus Globulus* seem to do well here. Wood of all kinds is very scarce in the Orange River Colony, and everywhere the wasteful, dirty habit obtains of burning "mist," dried cow and ox-dung, wasteful when we know it is nature; dirty, as every one confesses who uses it. Even the wood posts of the railway-fence have been entirely dug up and used for fuel. The absence of cultivation generally is most remarkable, the country has hardly been scratched, and is as bare of clothing as the natives. We hope before long to see state forests begun on a gigantic scale; the Africaner will then see with his own eyes the potent wealth of the soil, when ever the rainfall is adequate.

On nearing Johannesburg we were made aware that a guerrilla war was going on. An armoured train, as I have said, preceded us from Verreiging to Elandfontein, and at this last place where we slept a Boer attack being imminent, the railway platform was strewn with sleeping soldiers, gun at hand. At three in the morning I could sleep no longer in the railway-carriage, thoughts of my home and park so near at hand made me get up and pry the platform, until dawn, in company with a fine young Scot going to join his regiment at Krugersdorp under "Tullibardine," a descendant we remember of the famous "planting" Duke of Whol. It was a biting and an eager frosty wind that blew, nearly 6,000 feet above sea-level. How I looked for the first primrose-tint of eastern sky. All the great mines around us, which two years ago blazed with electric light, are now dark and cold and still. We left for the Rand at sunrise, and soon we saw forests stretching around, for here the land is clothed, and may we add, in its right mind.

JOHANNESBURG.

Soon the plantations of Jeppestown bore in sight, and it was with a curious feeling I alighted at Park Station once more. The town seemed half-asleep, but how the trees in the streets have grown wonderful. Very soon I made my way to the Park, which was hardly to be known, so vast has been the tree-growth in my absence. Very conspicuous were *Azacia dentata*, mollissima, and melanocypus, *Eucalyptus viminalis* and *Globulus*, *Pinus insignis*, *Pinaster*, *Halepensis*, and longifolia; *Cryptomeria japonica*, *Cupressus macrocarpa*, and sempervirens, *Juniperus Bernhardiana*, *Casuarina tenuissima*, *Cedrus Deodara*, *Quercus robur*, *Castanea vesca*, and *Panlownia imperialis*. Fruit-trees have done wonderfully well; Peaches of all varieties, Nectarines, Plums, common and Japanese; Apricots, Apples, Vines, and es-

pecially Prunes, of which the Californian variety (AEGN 1) expect to see largely grown in the near future.

My books and papers, regarding which I had many misgivings, were all right. London, Van Mueller, Schlich, Harvey, Sonder, Repton, *Kew Bulletin*, and last but not least, the *Gardeners' Chronicle* volumes, I greeted them all again. My small herbarium was also safe. Your Boer loves to commandeer gold, but he has a rooted aversion for what makes the gold, i.e., knowledge.

Paeonia, I found much to grow over. The care of the conservatories, through no fault of the man who had been acting in my place, had been handed over to the tender mercies of a coolie who did not know a Palm from a Primula, with results which may be imagined. Nothing had been re-potted for two years, and I could have sworn like a trooper at the state my Orchids were in. Many valuable plants had yamished into the "blue," a fine *Cocos Weddelliana* amongst them, to which place has also gone a hybrid Vine, from which I hoped much. But with plodding and patience, all will yet be well. *R. W. Aldwin, Curator, Jacobus Park, Johannesburg, September 1, 1901.*

ORCHID NOTES AND GLEANINGS.

"LINDENA."

THE plants figured in the recently-issued double number, dated September 15, are of exceptional beauty and interest. They comprise the following:—

CATTLEYA S. CALUMNIA VAR. *GIGANEA*. Flowers 11 cent, flat, orbicular in outline, segments spreading lanceolate, whitish, flushed and spotted with violet. Lip three-lobed, basal lobes triangular, whitish, anther-lobe narrowed at the base, expanding into a trans-versely oblong rich violet limb. This hybrid was raised by M. Riley out of *C. intermedia* by C. Yeklandia. It flowers in August, 1899.

CYPRIPEDIUM S. BURNSEIFFENSE. A hybrid between *C. Burchardiana* and *C. centaurium*, possessing the inequalities of *Reich-schidiana* with some peculiar touches. 179.

CYPRIPEDIUM ENCI VAR. *ARANTHA*. Standard white with a central yellow blotch and a few purple spots; the petals and lip are of a deeper yellow than in the type. 179.

LILIO-CATTLEYA S. PRINCEPS. Flowers roundish in outline, sepals 11 cent across, segments spreading, lanceolate, or oblanceolate, white flushed with blue, basal lobes of lip violet, wrapping round the column, anterior lobes rich purple with yellow streaks at the base. It is a seedling from *L. clematis* and *L. papilionata*. 179.

ONIDIUM BIGNONIAE VAR. *SPHENIDA*. Flowers oblong, flat, segments linear lanceolate, recurved, yellow with brown blotches; lip larger, narrow at the base, expanding into a broad canary-yellow limb, papilionate. 177.

ONIDIUM VILCOSHENSE VAR. *LINDENA*. A winter-flowering variety described in our columns, December, 1899, 179.

TROBILANTHEM VILCOSHENSE. Flowers 1 cent, long, oblong, flat, segments spreading, oblanceolate, peach-like brown; lip with a short stalk expanding into a broad, oblong limb, violet at the base, white in front, with a few purple lines. North Brazil, 178.

ZYGOPETALUM BERTII VAR. *WALLENII*. A magnificent form with flower 11 cent, across, flat, like a pointed fan, perianth segments spreading, lanceolate from a broad base, many nerved, and of a rich purple colour, with a yellow blotch at the base; lip of slender form and coloration 100 smaller. It is a native of Costa Rica. 173.

"DICTIONNAIRE ICHNOGRAPHIQUE DES ORCHIDES."

No. 15 for September, 1901, contains coloured figures and descriptions of the following species and varieties:—

1. *Aerides vandarium*, Rehb. f.;
2. *Angreum stylotum*, Rolfe;
3. *Ansellia gigantea*, Rehb. f.;
4. *A. confusa*, N. E. Brown;
5. *Cattleya Trianae* var. *Schroderae* alba; 6. *Cypripedium Youngiae*, Hort.;
7. *Dendrobium transparentum*, Wall.;
8. *Epidendrum fragrans*, Sw.;
9. *Laelo* - *Cattleya* "Impetratrice de Russie";
10. *Mastodivalla Schroderiana*,

Hort.; H. Odontoglossum Adriane, L. Lind.; B. O. A. var. André; B. O. A. var. "Queen Alexandra."

This is a most useful and trustworthy publication, edited by M. Cogniaux, whose acuteness and accuracy are only equalled by his diligence.

MILDEW.

IN the report of Mr. Arthur Paul's lecture on Roses before the Royal Horticultural Society, I observe a lamentation over the great prevalence of mildew in recent seasons. Edge Hall Garden has been always a notorious nursery for mildews. It was from specimens sent from it that the spot disease of Lilies, and two or three other forms of mildew, before unknown in England, were first described; and I regret to say that the garden still maintains its unenviable reputation. Therefore, I need hardly say that everything which appears in the *Gardeners' Chronicle* concerning remedies and preventives of mildew is eagerly read and put into practice, but seldom with great success. Roses and their ailments are in such careful and experienced hands that I will only say of them that my gardener has found syringing with Velthea Emulsion the best remedy he has yet tried for incipient mildew. Velthea is a preparation sold by most nurserymen in two forms; as a powder of the consistency of coarse sand, and as an emulsion for liquid use; full instructions are given for the use of both, and I have used both extensively. But besides Roses, Michaelmas Daisies have for three or four seasons been dreadfully disfigured by mildew. The mildew which affects them seems entirely external, and comes on first in hot, dry weather in July. The plants look as if they had been dredged with very fine flour, and though it is not fatal to them, they look ghastly, and wither prematurely. I am not sure whether the mildew is entirely atmospheric or is retained in the soil. In hot, dry summers we often see the leaves of whole fields of Swede-turnips covered with similar powder. However, last winter I dug up and divided all my Daisies, soaking every lump before replanting in a solution of sulphide of potassium, half-an-ounce to a gallon. I also dressed the surface as directed with Velthea powder; and when the plants were growing, I watered them with Bordeaux-mixture. Which of the remedies possessed the greatest virtue I cannot say; but between them I have nearly got rid of the mildew, which still continues in a part of the garden which escaped this treatment.

Another mildew destroys my Flag Frises and hybrid Montbretias. I was told by an expert, to whom I sent leaves, that though different in appearance, the disease was the same on both. Brown, withered patches appear on the leaves, generally in the middle, and spread both ways, destroying the plant when they reach the base. On Frises this mildew is now very prevalent throughout the country. I have found it existing more or less in every garden I have examined this year; but in healthy gardens its progress is slow, and it seems to attack only a part of the clump. At Kew and in Holland it is treated by powdered sulphate of copper dusted on the surface; but this treatment does not seem to exterminate it. It is worst on the hybrids generally called German Frises. Of these I have had to dig up and burn about three-fourths; the rest I have treated as I treated the Astors, adding powdered sulphate of copper on the surface. The result has not been very successful.

The Montbretias are more easily treated. The Frises being evergreen, the disease seems

to be retained in the tissues of the leaves; but it does not seem to descend into the core of the Montbretias. Anyhow, by soaking these in solution of sulphide of potassium, and planting them in untainted soil in partial shade—for bright sunshine seems to aggravate the disease, I seem to be getting the upper hand. But I learn something new about the cultivation of these beautiful flowers every season, and have never before had them so good, or seen them anywhere so good, as they have been in my garden this year. The rules for their successful cultivation are few and simple, though I see that different correspondents to the papers differ much in their advice concerning them.

Another remarkable and fatal mildew has destroyed, or is destroying, my whole stock of a hybrid Saxifrage, known as the white-flowered S. Boydii. I have had this ever since its introduction, and besides many bunches on stone-heaps, had thirty or forty pots of it. First a single crown turns brown and withers, then, in spite of all attempted remedies, the disease spreads to the whole plant. This must not be confused with the effects of sunburn, which is common on Saxifrages of this class. When exposure to the sun is the cause, the burnt parts may be cut out, and the plant recovers; but cutting out is useless in a mildewed plant. C. Wolley Dod, Edge Hall, Malpas.

TREES AND SHRUBS.

LOXICERA HILDEBRANDIANA.

THIS handsome Honeysuckle has been mentioned more than once of late in these columns, and was illustrated at p. 219, September 17, 1898; but its value in the garden is so great that I venture to add a few details about the plant, more especially as it is seen growing in Mr. Ewbank's garden at Ryde. Those who are acquainted with the species, and who saw the plant, were surprised at seeing such fine trusses as those sent to the Drill Hall recently from Mr. Ewbank's garden. I mentioned the exhibit to several whom I thought it would interest during the day, but judging from the replies given, it would appear the majority concluded that all the fineness of the exhibit was due to the favourable climate of the Isle of Wight. Now there is a brief history attaching to this particular plant, which will show that however much the climate of Ryde has to do with the floriferousness of the plant, it may be grown in the same locality without flowering at all; indeed, this has happened. The climate is, therefore, not the all-in-all. When Mr. Ewbank received his plant, it was grown in a pot in the greenhouse; it remained there for several years, but never showed flowers, though it was healthy and strong. Eventually it was planted out against a west wall, where it received full sunshine. I believe the plant has never received water artificially, or at least sparingly. The plant's floriferousness and vigour are owing to the warm position in which it is planted, the shoots ripening thoroughly. The leaves possess a substance more akin to that of the Magnolia. The same species of plant at Kew in the No. 4 range, although being the parent of the other, makes many yards of growth in a season, has a stem equal to a large walking-stick, but so far as I can see, it does not flower, or only sparingly so. It is quite distinct, too, in leaf-colouring and substance. Probably the partially-shaded position in the greenhouse may have to do with the thinner leaves. What I desire to show is, that Mr. Ewbank's plant undoubtedly owes its successful flowering to the hot position. E. Jenkins.

THE SEED TRADE.

REPORT OF CROPS IN HOLLAND.

THE following report is afforded us by Messrs. Sluis & Groot, seed growers, &c., at Enkhuizen, Holland, and may be of interest to some of our readers:—

"A severe winter, with sharp frost, which proved quite disastrous for most biennials, particularly Cabbages and Turnips, was followed by unfavourable spring weather. Rain and snow interfered with the cultivation of the fields, and with planting and sowing. Later on it improved, and owing to the favourable summer the prospects as a whole are satisfactory.

Cauliflower promises a good crop.

White Cabbage.—A great many plants were lost by severe frost. What have escaped have developed partly well and partly very well. We estimate our crop at about one-fourth of the amount which would have been harvested if no plants had been frozen.

Red Cabbage has suffered less from frost than the white varieties, and consequently it promises a better crop.

Savoy, Brussels Sprouts.—The crops will be poor.

Borecole.—A middling crop.

Turnip.—Only very few plants escaped the frost, and some varieties were entirely lost; consequently the crop of seed is a very small one.

Swede was not so badly injured as Turnip, and the plants that lived have developed very well; we expect a proportionately better crop.

Mangold, Beet, Sugar-Beet stand very well, and promise a good crop.

Carrot looks very well, but is only grown here on a small scale, and consists mostly of local varieties.

Onion.—Although not quite exempt from disease, the general appearances are very good, and justify our expectation of a good crop.

Leek stands well.

Carrot-salad.—A great deal of that which was sown was lost in the winter, the rest being a middling crop.

Spinach is being harvested now, so that exact information about the crop cannot be given, but we expect it to be three-quarters to full.

Peas.—Early varieties are good, but the late ones have suffered from heat, and are below average.

Radish looks well, although in some fields the plants are not exempt from lice.

Spanish Radish stands pretty well.

Scorzenera.—Average crop.

Celeriac, Parsley, promise a good crop.

Cherrie was partly killed by frost; and that which was left produced an average crop.

English Beans.—Medicure; have suffered from heat.

Running Beans, Dwarf Beans, Cucumbers.—Stand well, and promise a good crop.

As regard flower seeds, which we are growing again on a considerable scale this year, we are glad to say that, generally speaking, we may expect a pretty good crop. Consequently we are likely to be able to supply nice quantities of several of our specialities, such as Nasturtium, tall and dwarf, as well as *N. peregrinum*, &c."



FIG. 71.—MAMILLARIA SULCATA.

CACTI.

CHARLES DARRAH, Esq., of Holly Point, Heaton Mersey, near Manchester, is the fortunate possessor of a collection of rare and interesting Cacti which fills seven glasshouses; and many of the rarer species have been imported from their native country by Mr. Darrah, who is sparing of no expense in procuring them. *Mamillaria (Anhalonium) sulcata* (fig. 71) flowered at Holly Point for the first time in the summer of 1900. The flower is of a purple colour, and lasts about four days; it opens at about 11 A.M., and closes at about 3 P.M. *Opuntia clavarioides* var. *crispata* (fig. 75) is considered to be one of the gems of the collection; the plant shown is grafted on one of the more robust-growing *Opuntias*. *O. microdasys monstrosa* (fig. 76) is a very handsome plant, almost covered with bright yellow-coloured spines.

Opuntias are of easy cultivation, provided they are potted in one-half lime-rubble and equal parts of peat and clayey loam, to which a little barilla is added to neutralise the acid in the clayey soil; and they are exposed always to the fullest amount of sunshine. The drainage should be very good, and may consist of broken brick or sandstone.

No part of an *Opuntia* should ever be allowed to touch the ground, but be supported by bits of rock, brick, &c. When the hardier species are planted out-of-doors, the site should be elevated above the surrounding level, and well drained. The best place for them, therefore, is the sunniest part of a rockery.

The photographs from which the figures were prepared were kindly furnished by Mr. C. Darrah.

HARDY FRUIT AT BARHAM COURT.

THE Crystal Palace fruit-show of this year is near at hand, and there is naturally some concern in the minds of ordinary exhibitors at that exhibition as to their own prospects, as well as those of others. That there will be keen competition is certain, and in spite of the fact that in many districts hardy fruit is a moderate crop, there will no doubt be very fine samples staged. Of competitors, few have occupied a higher position with Apples and Pears, but the former especially, than has Mr. Woodward, who is Mr. Roger Leigh's very able gardener at Barham Court, and it was with exceeding interest and curiosity that I very recently visited his gardens, not only to see how his fine fruits were produced, but also to see how far he was likely this year to be a competitor—formidable or otherwise.

Barham Court undoubtedly is situated in one of the most favoured parts of Kent, so far as fruit and Hop culture are concerned. The soil is of a fairly deep, retentive loam, and the situation is one sloping gently to the south, with ample shelter on the east side. But then it would be folly to assume that these are advantages obtainable only at Waterringbury. On the valley side which margins the Medway there are myriads of spots as warm, as sheltered, with as good soil and surroundings, but they are not devoted to fruit-culture. In all these places—given labour, manure, and practical knowledge, such as is found at Barham Court, and all that

branches thin, and these, too, are either well spurred, thus forming branch cordons, or as seen in so many cases, the fruit is of such abundance that the crops form the best check on too vigorous growth.

I was particularly struck with the fact that in summer and winter pruning, both on bush trees and wall trees, of Pears, Mr. Woodward does not act according to the technical Cocker. He does not summer-prune until the end of August, or even later; and when he winter-prunes, he then does not leave the bases of these summer shoots as spurs, but practically cuts them out. By that act he forces the production of a base-bud close to the main stem, and in nearly every case that bud the second year becomes a fruit-bud. There are no long spurs on his trees, but of fruit generally there is at once plenty and wonderfully fine. There are no Apples on walls or under glass in any way. Every Apple is grown on open trees of the nature described. The splendid samples obtained are due first to the deep soil, second to liberal manure mulches, and third to heavy waterings when the trees are laden with fruit. It is only possible to get fine samples when these requirements are furnished. What marvellous crops I saw on lush trees of Stone's Pippin! Surely, 20 acres of such trees and such a crop would represent a fortune for any one. Then what grand fruits of Peasgood's Nonsuch, Emperor Alexander, Bismarck, Warner's King, Prince Albert, Mère de Ménage, Beauty of Kent, New Hawthornden, Belle du Bois, Lord Derby, Tower of Ghamis, Tyler's Kernel, Lord Grosvenor, and many other of the finest kitchen and dessert varieties on these bushes! What Cox's Orange Pippins, both in size and quantity; Ribston Pippins, quite remarkable samples; Worcester Pearmain,



FIG. 75.—OPUNTIA CLAVA RODENSAE CRISPATA.

is done there could be done elsewhere. Then one of the strange features of the gardens here, some ten or eleven acres, is that by far the greater portion is given over to hardy fruit culture. Some is devoted to vegetables, but not a great deal.

APPLES.

Mr. Roger Leigh planted so largely some years ago when the late Mr. Haycock was in charge, because he is a fruit enthusiast. But then the original trees were largely trained artificially, and very many that border the foot-paths were planted and trained as horizontal cordons—a somewhat fanciful method of training, which does not find favour now. Before the planting, the ground, naturally good, was trenched very deeply, and fairly well manured. No wonder then that all descriptions of trees, no matter of what form, grew almost luxuriantly, and produced far too much wood. Mr. Woodward, when he took charge of the gardens, said that the system in operation was faulty, and therefore he allowed all these artificial or cramped trees to come away into free growth gradually, so that no horizontal cordons are to be seen anywhere, but very many flat-top trees that have grown from out of them, having branches from 9 to 10 feet in height, and generally fruiting freely. In the inner portions of the fruit quarters the trees are almost exclusively of bush form. They seem to be rather close-planted, as many are but 10 feet apart; but the pruning keeps the

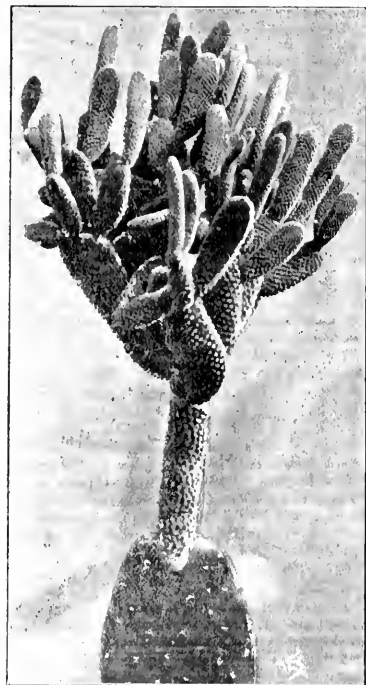


FIG. 76.—OPUNTIA MICRODASYS.

Allington Pippin, specially fine, and far too many others to mention here! they will be seen at the Crystal Palace doubtless in due course. Whilst referring to Apples it is worthy of mention that I was shown a two-guinea tree, a very small one, which being cut back to make it break, had only three shoots upon it; but Mr. Woodward, when he cut back this maiden last winter, wisely resolved to use the severed shoots as grafts, and in the spring it was worked on to a small tree standing on the Paradise stock. Now may be seen from the three grafts eleven shoots stout and sturdy, generally 21 inches long, so that if the original tree was worth 42s., the grafted one is worth six times that sum. Probably it will not be long before samples of Charles Ross will be furnished from Barham Court.

PEARS.

Pears on walls are truly splendid; some of the finest crops are on gridiron-shaped trees—that is, those which have base branches of lateral form, from which rise vertical ones to the top of the 10-feet walls, laden with really grand fruits. Some trees are horizontally, some fan-trained. It seems to matter little how the trees are trained, there are the fruits. One matter of the apparently most trilling nature, yet very unusual, arrested my attention in connection with all the wall trees, no matter on what aspect grown. It was the securing just on the front of each stem, close to the ground, a piece of cork bark, the object being to prevent the hot sun-rays from scorching the bark of the tree-stems—bark being used because it is less noticeable than anything else. Whether there is anything useful in this practice or not, certainly Mr. Woodward is a strong believer in its efficacy, and the splendid Peach, Nectarine, and Pear trees seen on the walls by scores, and their superb crops, bear eloquent testimony to his judgment. There were grand crops of Pitmaston Duchess, Beurré de Mortillet, Margaret Marillat, Doyenné du Comice, Duchess d'Angoulême, Darcoulean, Beurré Diel, Josephine de Malines, Winter Nellis, Passe-Crassane, Nouvelle Fulvie, and indeed far more than there is time to note.

PEACHES.

Peaches again are an immense crop: these are on east and west, as also on south walls, scores of grand trees ranging 18 feet by 10 feet each, and perfectly furnished in every part, and splendidly fruited. There is one wall 80 feet long by 10 feet high, that has a glass front 10 feet wide, the lower part a plate being 8 feet from the ground. There is no other protection. Here Sea Eagle and Nectarine Peaches chiefly, with one tree of Princess of Wales, covered the wall to an inch, and all have grand crops. It is not usual to see Peaches on east walls as is the case here. There are three-span Peach-houses, and nearly all the trees in them are standards, some have heads 16 to 18 feet through; all these fruit abundantly. There is one old standard outside, between two of the houses, brought out several years since from inside, where it mildewed badly. This fruits annually, and when I saw it, it was laden with good fruits. It is a Royal George; it has been outside ten years.

Mr. Woodward fears that by the time the fruit-show is held, Peaches in the south will be all over. Probably Plums will be scarce also then. If asked how is Barham Court likely to show at the Crystal Palace, I should say well, certainly, but not so largely as in some preceding years. Not all varieties are fruiting so well this year as are those I have mentioned. A. D.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

HOUSING THE PLANTS.—Place under cover those plants which have been grown to yield large blooms for exhibition or otherwise. Do not permit plants which have opening buds upon them to remain out-of-doors with a view to retarding them; it would not retard them, but the blooms would be spoilt by rain and heavy dews. The purposes for which the plants are required should be studied before housing them, so that they may be arranged in batches. Late plants that do not promise to be in time for any particular show should be afforded the warmest part of the house, and *vice versa*. It is an unwise proceeding to place them all together, and then realise in a few days that they must be re-arranged.

The best house for Chrysanthemums would be a span-roofed greenhouse, but seldom can such a house be afforded them. Vineries or Peach-houses from which the crops have been gathered will suit them well. All lateral growths may now be removed from the Vines to admit as much light as possible; and any thinning that will be necessary for the Peach-trees may also be done now.

In respect to arranging the plants, it is best to form a sloping bank of them; the blooms may be better seen thus, and there is greater convenience. If the chief motive be that of exhibition, place the Japanese varieties in a house by themselves, so that more fire-heat can be afforded them when the blooms are developing. The flowers are thereby improved, the colours are brighter, and the forests develop more kindly than they do where no fire-heat is employed. In all cases place the plants as near to the glass as possible; they may be placed quite closely together if space be limited. The bottom leaves of the more hidden plants will quickly turn yellow and fall, but not much harm can happen to the plants in consequence, because the lower leaves will have carried out their functions before they fall.

When the plants are placed under cover they will need abundance of air. Open all the ventilators quite wide day and night; and if the weather be dry and bright, and the buds are not showing colour, the plants will be all the better if they are syringed once each morning for a week or so. The plants will seldom require water more than once a day. The pots being packed closely together, air does not pass among them so freely, and the sun does not so readily reach them. A dry atmosphere will tend to prevent the spread of mildew. Whatever watering is required should be done in the morning. In damp or foggy weather less air may be admitted, and the hot-water pipes should be warmed during the day. If mildew appears, dust the plants affected with sulphur at once. The roof-glass should be kept quite clean until the blooms are unfolding, so that the plants may have all the light possible.

Continue to feed the plants until the blooms are quite three-parts expanded, never giving strong doses. If sulphate of ammonia be applied to late plants it will hasten their development, and is quite safe if not more than $\frac{1}{2}$ oz. be dissolved in 1 gallon of weak manure-water. Early plants that are developing their blooms should be afforded a position by themselves, where they may be lightly shaded by stretching tiffany over the glass outside, or inside above the plants. It would be better still to arrange the plants in the house so that they face to the north, or under Vines where the foliage will give a sufficiency of shade. E. Molyneux.

AUTUMN-FLOWERING PINKS.

The best Pinks owe their existence to Mr. B. Ladhams, of Shirley, Southampton, who has raised several improved varieties, especially those that produce flowers for a long period of time. At the present time he has in flowering three superb varieties, quite as full of flower now as they are expected to be in early summer. These are perpetual-flowering, and a useful addition to border flowers. Florence is a handsome flower, with pure white petals, heavily blotched or marked in the centre with crimson-purple; it is a full, fragrant flower. Marion is a fringed Pink, a rosy-mauve self, very sweet-scented, and free-flowering. Mabel is of a pale pink tint, with plum-coloured markings in the centre, and it is heavily fringed, and strongly fragrant. E. Molyneux.

GROWING CHRYSANTHEMUMS.

On Tuesday, September 17, at a well attended meeting of the Dulwich Chrysanthemum Society, Mr. Taylor completed the paper on "Growing and Exhibiting Chrysanthemums," which he had previously brought up to the stage of placing the plants in their summer quarters.

After some preliminary remarks, the taking the bud came under consideration, and beginners were recommended to take the buds earlier than usual. All buds, with the exception of those of the Vividum Morel family, should be taken by the third or last week in August, and even these should be secured by September 1. To obtain buds in some varieties, it is necessary to pinch in April, thus causing an earlier break, while others (Phebus, for instance), should develop naturally at the right date if struck in January. Mrs. Weekes, Florence Molyneux, and Edith Tabor do well if struck late in March, and the first bud is secured. In a large collection recently seen at Brighton, and grown for exhibition about November 12, the buds were taken at a much earlier date than that usually recommended.

Some growers find that the blooms on buds taken late develop too early, but an earlier bud takes so much longer to develop its many petals, that the remedy is rather in taking early than late.

The next consideration is housing the plants, which should take place about October 1, although the weather, too, must be considered. For the first week, air should be afforded whenever possible, and the syringe used lightly early in the day if the weather be bright. Fumigate on alternate nights, and afterwards fumigate once a week. Other pests should be caught and killed. Slight shading is beneficial when the blooms are unfolding. If it is found that a plant will be too early for the purpose required, remove it to a dry, dark room, and afford but little water; or the blooms may be cut, the stems stripped of leaves and placed in bottles, if for show. Should a plant be backward keep in the warmest part of the house.

When cutting blooms for show, leave about 18 ins. of stem; and even when placed in their cups, leave an inch of stem to enable any necessary dressing to be done at the show. Take care that no duplicates appear where distinct varieties are required. Arrange the blooms in a pleasing contrast of colour, say Phebus against Wm. Seward, and Mrs. G. W. Palmer by the side of Edith Tabor—never putting two of one colour together. When on the exhibition-table raise the back row as high as the cups and tubes will allow, place the second row just above the bottom florets of the back row, and the same with the front. Adjust the name-cards and the class-card in their proper places.

Beginners are strongly recommended; not to enter in too many classes; to send in their entry in good time; to carefully follow the directions and regulations in the schedule; set up their exhibits in good time; and to accept the verdict of the judges in good faith. A good discussion followed, many little difficulties being elucidated by Mr. Taylor.

At the October mid-monthly meeting of the Society, Mr. Percy Waterer has kindly consented to give a paper on "Chrysanthemums," and a big attendance is looked for.

Newby's nearest railway station is Borobridge, three miles distant, on the North Eastern line from Harrogate to Pilmoor. Part of the way lies through the very large park that surrounds Newby Hall, for it is one of those country residences where the land, as far as the eye can see and further, belongs to the owner of the house, where there is abundant fishing and shooting, and means for the enjoyment of most other country sports.

The house is built of red brick, and is unpretentious. Originally, it is said to have

Captain Vyner sets great store. Its inscription is thus:—

THIS EQUESTRIAN STATUE OF JOHN SOBIESKI, KING OF POLAND.

Trampling on a Turk, was bought by Robt. Vyner, in 1675, at Leithorn. He altered it to represent Charles II. and Oliver Cromwell, and erected it in the Stocks market, London. The market was removed in 1788 to make place for the Mansion House, when the Statue was placed in an Inn Yard till 1779. It was then given to Robt. Vyner, Esq., who took it to Gantow, in Lancashire, thence whence it was brought to its present site in 1837.



From a photograph by Mr. Watson, Ripon.

FIG. 77. NEWBY HALL, YORKS, THE SEAT OF CAPT. VYNER.

NEWBY HALL, YORKSHIRE.

The residence illustrated in fig. 77 belongs to Captain Vyner, and is in rather an out-of-the-way district of the great county of Yorkshire. By this is meant that the estate is not near to the main line of railway, and in consequence the number of visitors is not usually very large. At the same time, it is in an exceedingly interesting locality, for it is only four or five miles from Ripon, and, in addition to the beautiful cathedral at the latter place, there are Studley Royal, and many other delightful residences within a ten miles' circle.

been built in 1705 from a design by Sir Christopher Wren, but it has been enlarged and altered very considerably since. Our view shows the south front, the chief feature of which is a formal flower-garden on the terrace, with box-edging to all of the beds, surrounded by a stone wall and palisades. There are no rare trees in the picture, but a White Birch may be easily distinguished. There is a pleasant view from this point over the river Ure, that runs through the estate. A new entrance has been made on the east side, where there is a long and neatly kept ribbon border. Just outside in the park is a statue, upon which

The kitchen-garden includes 6 acres of ground, and the soil is exceptionally heavy. It is a curious garden in several respects. Not only is there a long pool in its centre with a broad grass walk by its side, but the oblong-shaped ground, deeply depressed in the centre, is surrounded by walls, and another wall divides it longitudinally.

At the highest corner of the garden is Mr. Chas. Simpson's new cottage, so the gardener is in the midst of his charge. At this point is a very fine wrought-iron gate, and a similar one is at the other end of the garden. They were made in Germany, it is said, and were

exhibited at the World's Fair, Chicago. The old-fashioned character of the kitchen garden is shown by the box-edging in parts, as well as by some very old fruit-trees, the number of which Mr. Simpson has wisely decreased. With such heavy soil to cultivate, the raising of good kitchen garden crops is not an easy task, but Mr. Simpson showed us plenty of vegetables in good condition, and excellent Onions.

It may be worth while to mention that the Strawberry which is found to succeed best in these conditions is the old Vicomtesse Hériscart du Thury. Royal Sovereign, said Mr. Simpson, although used exclusively for forcing, was too soft for cultivation out-of-doors; if the weather is at all wet, the fruits decay upon the ground or straw litter. The Loganberry, Japanese Wineberry, and *Rubus laciniatus* succeed admirably.

Mr. Simpson has been at Newby four years, and has planted a number of young fruit-trees, and in the course of a season or two there should be good crops of Apples, Plums, Pears, and Apricots succeed well on outside walls. When looking at the wall-trees, Mr. Simpson pointed out two trees of Plum Green-gage, about 12 feet high and 12 feet wide, which he moved last year on July 25. The tree at the time bore a crop of fruits, and not only retained them after removal, but developed them to a serviceable size, showing that the operation of transference must have been performed with exceeding care.

Newby is not too far north for the Tomato to succeed out-of-doors. There are 700 plants put out in a border in front of a glass range facing south, and they are yielding a very heavy crop. The secret of success is the same as it is further south, putting the plants out sufficiently early and cultivating them to a considerable size before doing so. The two best varieties for this garden are Ruby and Frogmore Selected. Six hundred Chrysanthemums are grown upon the large bloom system, and 350 as bush plants.

The principal glasshouses are contained in a range nearly 200 yards long, facing south, upon one side of the gardener's house. There are four Peach-houses, five vineries, and one plant-stove.

Peaches were cropping heavily, the two favourite varieties being Royal George and Grosse Mignonne. Like most other Scots gardeners, Mr. Simpson takes great interest in his Vines, which he cultivates with much success. That he believes in "trials," is shown by the following list, which includes some of the varieties grown at Newby:—Barbarossa, Gros Colman, Duke of Bexley, Gros Maroc, Black Alicante, Mrs. Pearson (in better condition than one sees this variety nine times out of ten), Golden Queen, Black Hamburg, Muscat of Alexandria, Madresfield Court, Muscat Hambro', Mrs. Pinee (capitally done), Buckland Sweetwater, Bow-hill, Lady Hutt, Lady Downe's and Foster's Seedlings. "But," said Mr. Simpson, "as the Vines require to be renewed, I shall only plant varieties that best succeed here."

Notwithstanding that he is such a foe to wasps, as shown *ante*, p. 114, Mr. Simpson is an enthusiastic and successful bee-keeper, and is one of those gardeners who like to see the apiary sometimes the subject of an article in the *Gardeners' Chronicle*. Some interesting details could be written of the amount of honey he has obtained, and of a bird that had nested in one of the hives during the present season, but space forbids.

In conclusion, a word may be said of Captain Vyner's stables, for most folks know that he

breeds and runs racehorses. Those who are interested in such things would be delighted with the fine animals the writer saw in those magnificent stables. P.

The Week's Work.

THE KITCHEN GARDEN.

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

Kidney Beans.—Sowings in pots that were made at the end of August which have stood outdoors should now be placed under cover, and afforded a temperature at night of 60, and 75° or 80° with sun-heat during the day. Place them in a light position near the glass, and maintain a moist atmosphere by frequently damping the pots, floors, walls, &c., syringing the plants when not in flower, and ventilating freely in favourable weather. In order to maintain a supply of Beans from the end of the present month to the end of the year, a light and well heated pit or house is essential, and sowings should be made in alternate weeks; but even then the production of pods is not always satisfactory, the sunless days in November and December being inimical to the forcing of French Beans. Let each plant be supported with a few sprays of Hazel or Birch.

Potatos.—I am lifting the crops of the latest varieties of Potatos, and find them very good as regards Up-to-Date, Magnum Bonum, and Imperator, and the tubers are very free from disease. Potatos for winter and late spring consumption are the best or if placed in the store the same day they are lifted, and not left exposed on the ground. The tubers should be placed in small quantities together in bins or heaps, spread to an even depth—say of 6 to 8 inches. If they are to be stored out-doors, the clamps should be formed on sloping ground, if possible, so that moisture may readily drain away from them; in fact, a shallow trench should be formed round each clamp to carry off the water. The base of the ridge may be 2 feet wide, and Potatos piled up 2½ or 3 feet, clean straw placed over them, and over all a layer of soil 8 to 10 inches thick, making it firm and smooth, thatching the whole with reeds. It is considered that Potatos keep better in a clamp made 20 inches below the ground-level, as the temperature is more even there than on the surface. Only sound tubers should be put into store, "seed" being sorted out and put in a clamp by itself. The stock of Potatos should be examined occasionally during the winter, especially if it be found that disease has attacked them.

Miscellaneous.—Where Laurel hedges bound the "slips," as the quarters outside a walled-in kitchen garden are termed, these should be cut in with a knife, and the prunings collected and burned, the ashes being spread on soil. Owing to the frequent showers of late, weeds are growing apace, and the hoe must be kept at work whenever the weather will permit.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Pultineux, Pultineux Park, Exeter.

Flower beds.—In most parts of the country the beauty of summer, the bedding, is past or on the wane, more particularly in parts where much rain has fallen. Tuberos-rooted Begonias keep presentable for a longer period than Pelargoniums, and may remain till frost renders it advisable to clear the whole of the beds. When clearing flower-beds if the stock of cuttings of any plant is short, some of the smaller plants may be potted up, either to furnish early cuttings or for forming specimen plants another season. Plants of Ivy-leaved Pelargoniums and Abutilon Thompsonii, if lifted and potted will be suitable for future planting. Such plants will not require much space in a cool house or frame during winter, where they need only protection from frost.

Afford water sparingly during winter. If these plants have been associated in the beds with sub-tropical plants, they may be left until the Cannas are lifted. For several seasons past we have let *Pyrethrum aureum* remain where it has been used in summer, and it has afforded a little colour among the duller plants put in during the autumn.

Manuring the Beds.—It is generally more convenient to add the necessary manure to the beds at this season than in the spring, as the manure to be applied in spring will be determined by the requirements of the plants to be grown in the different beds. At this season, beds to be filled with Wallflowers, Myosotis, Polyanthus, &c., unless fairly rich, may be afforded a liberal dressing of half-rotten manure, thoroughly incorporating it with the soil whilst digging. Wallflowers are gross feeders, and in early spring require abundance of moisture that they may flower well. By adding manure now, it will make the ground more mellow for the plants in the summer. Beds which it is intended to plant with bulbs may not require much manure now if the ground is in good condition. Possibly they may be improved by adding to the soil some scrapings from the roads, especially if the soil is of a heavy nature.

Calceolarias.—To propagate the shrubby varieties, place in a frame or frames some sandy or gritty soil, placing a layer of spent Mushroom-bed beneath it. Make the cuttings from growing shoots, rejecting all woody shoots that have flowered. The atmosphere in the frame will require to be kept moderately close until the cuttings have made some roots.

Gladioli.—As the stems ripen, carefully lift the corns, and lay them in a cool house or in cold frames to dry. Before storing them in fibre or sawdust, separate the corns singly and clean them of the loose soil.

General remarks.—The propagation of plants for next season should be brought to a finish; late-struck cuttings being unsatisfactory, and any deficiency in the stock of plants may be met when clearing the beds by potting-up some of the more compact-growing plants. *Nicotiana sylvestris* has been used freely here, mixed with some of the best varieties of Cannas and Abutilon Thompsonii, with a carpeting of *Vinca variegata* major, and has proved very attractive, the leaves growing to a large size, and the flower-spikes also; the effect being enhanced by a background of Conifers.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PARK, Esq., Prestwood Hall, Loughborough.

The Rose-house.—Growth in climbing varieties of Roses indoors having ceased, the aim of the gardener should be directed to ripening the wood, as on this depends the flowering next season. Constant ventilation day and night, and a drier atmosphere, must be afforded, the syringing of the plants, and damping of paths being discontinued, or mildew may affect the plants. Remove all very weak growths, but do not prune the plants for a month yet. Water should be gradually withheld from the border, but never allow the soil to become quite dry. If the pruning is carried out in the early part of next month, the borders should be allowed to become dryish for a fortnight previously. If any alterations or renovations of borders are intended, the required materials should now be got in readiness; these consist of strong loam, road-scrappings, and rotten farmyard-dung. The whole should be well mixed together before it is used. A Rose border should be about 3 feet in depth, including 1 ft. depth of drainage material, and be afforded a good outlet for moisture. Before the soil is put in, lay turves grassy-side downwards over the rubble. If the border be made a month before any planting is done, it will have settled considerably, and be little likely to settle greatly afterwards. Good climbing Roses are Climbing Niphetos, Climbing Perle des Jardins, Bonquet d'Or, Cheshunt

Hybrid, Madame Pierre Cochet, Maréchal Niel, Reine Marie-Henriette, Wm. Allan Richardson, and Fortune's Yellow, a variety I have not succeeded in flowering. Other varieties worthy of a place if there is space are Fidoine, Climbing Mrs. W. J. Grant, Waltham Abbey Seedling, Pink Rover, and Grand Duc E. Ludwig.

Primula sinensis, and the double-flowered varieties should now be removed from the cold frames in which they have been growing to drier and slightly warmer quarters, and be accommodated on shelves near the glass, or the front stages of forcing-houses. Afford water sparingly, otherwise damping off and mouldiness about the collar may affect them, and then nothing will prevent the loss of the affected plants. The later batch of plants should be kept growing in an intermediate-house, and close to the glass.

General Remarks.—Prick off young plants of *Humex elegans* and *Schizanthus* as they become large enough to handle. Pot on herbaceous Calceolarias, and prick out late seedlings. Cinerarias now require to be put in the pots in which they will flower, potting only with a moderate degree of firmness. Campanula pyramidalis, if not already potted, should be put into 9-inch pots, making use of a compost of loam, decayed manure, and mortar-rubble, finely sifted, in lieu of sand. Keep them outside till frosts occur; a cold frame will then afford them suitable protection. Poinsettias will be benefited by frequent applications of weak manure-water. Late-flowering Cannas may be introduced into a temperate-house for autumn flowering.

THE ORCHID HOUSES.

By J. H. CHAPMAN, Gardener to R. I. MEASURE, Esq., Cambridge Lodge, Flookien Road, Camberwell.

The Cattleya-house.—*Cattleya labiata* autumnalis is now in flower, and at a season when its absence would be really felt. As an imported plant, and while it retains its native vigour, it is one of the easiest of plants to manage; but after a time the vigorous constitution declines, and cultivation becomes increasingly difficult. The decline in vigour is doubtless due to the freedom with which it blooms, and the cool autumn weather assists in retaining the flowers in a fresh condition for a longer time than is the case with species flowering in the summer. It is therefore advisable to remove the flower-spikes within a reasonable time of the flowers becoming expanded, and place them in water on the plant or in the dwelling.

Cattleya Schroderae, *C. Mendeli*, *C. Traneae*, and *Leulin purpurata* species and hybrids about to finish up, sometimes collect moisture about the base of the new pseudo-bulbs inside the outer covering, which become blackened and decay. Where any discoloration is observed, the skin should be slit from the top to the bottom, and loosened, if not entirely removed all round the growths, so that the enclosed moisture may dry up, the plants being put into a dryer house, and water withheld altogether for a time. The cause of the trouble is usually drip from the roof, or too much moisture in the air of the house. It is advisable at this season to reduce the humidity of the air in the house. Direct draughts from the ventilators, which often cause trouble in this way, should also be guarded against.

Phalenopsis.—Although late in starting into growth, the Phalenopsis having been favoured by much bright sunshine, good progress has been made, and the plants are now throwing up their flower-spikes. No species of Phalenopsis should be afforded water before it is seen that the moss has become thoroughly dry, and then they should be dipped into a vessel of water, and not afforded water with a water-pot. The water should be tepid, otherwise the plants will suffer a check.

Temperatures.—The night temperature of the Phalenopsis-house should range from 65° to 68°; that of the East Indian-house 63° to 65°; the Cattleya-house 60° to 63°; the inter-

mediate-house 55° to 58°; the Masdevallia and Odontoglossum-houses from 50° to 55°, remembering that the first degree below the minimum the first thing in the morning will not harm the plants, providing the degree of moisture in the air is correspondingly reduced. Damping down should not be proceeded with until the normal degree of warmth in a house is reached. The tender subjects placed in the cool divisions during the summer, remove to a warmer place forthwith.

THE HARDY FRUIT GARDEN.

By C. HERBERT.

Peach and Nectarine trees which are denuded of fruit may now have the shoots that have borne fruit removed instead of at the winter pruning. In the case of over-strong trees of Waterloo, Alexander, and other early varieties of the Peach, and Early Rivers and Lord Napier Nectarines that have made strong growth, root-pruning may now be undertaken without any fear of a loss of crop next year. Before commencing, the borders, if dry, should be afforded water copiously a few days previously. A commencement should be made by digging a semi-circular trench at a distance of about 4 feet from the stem, all roots being cut off at that distance, and being cleared, the soil should be dug carefully away from the roots with a digging-fork within 2 feet of the stem; and if the existence of tap-roots is suspected, these should be sought for under the ball of soil, and cut through with a spade. All the strong roots should be reduced in length to about 2 feet, measured from the stem, and every sucker carefully removed with the knife from the roots. If the staple be close and heavy, let some fine rubbish, wood-ashes, and charred garden refuse be mixed with it before the roots are relaid and planted. It is not advisable to add any new loam to the roots of trees that have much vigour. Make the soil very firm when relaying the roots, and be sure it is firm below the ball if that was disturbed by searching for tap-roots. All roots should be laid horizontally and evenly, but not at one level, and some may be brought near to the surface of the border. Let the finer particles of the soil be first spread over the roots, and afterwards the rougher portion, and filling in so that the uppermost roots are 3 inches under the surface. At this season a copious application of water will be beneficial, and if the weather is dry, an overhead occasional syringing will assist the trees to retain their leaves. Peach and Nectarine-trees that bear good crops annually seldom need to be root-pruned, but young trees need the operation at frequent intervals till they begin to bear fruit. It is advisable at times to lift and re-plant young trees, and not do much root-pruning.

Maello Cherries. The trees which are bare of fruit may have the fruiting-shoots removed, and the young ones temporarily secured with twigs and ties; and the trees afforded a good cleansing with water, or with Quassia-water if black-aphis is infesting the shoots.

FRUITS UNDER GLASS.

By MALCOLM McINVALE, Gardener to SIR CHAS. TESSARI, The Glen, Innerleithen, Peeblesshire.

The Earliest Pot-Vines. In order that the Vines may start freely, afford them a slight bottom-heat, a bed of fermenting material, consisting of two parts leaves and one part stable-litter, being very suitable. Place Vines so that they will remain level with the top of the bed, and bring up the material round about the pots, loosely in the first instance, and not having a temperature higher than 70° at the first. Vines that have been ripened early, pruned, and have had about six weeks' rest, may be started at this date. The temperature at starting should not exceed 55° by artificial means, but when the buds begin to break, it may be gradually raised to 60° or 65°. The canes should be secured in a horizontal position, so as to induce an even break all along them. Syringe them three or four times daily.

Preparing Vines for Early Forcing. Where the roots grow partially or wholly in an out-

side border, fermenting materials should be got in readiness for covering it as soon as the house is closed. In the meantime, cover the border with lights and other means for warding off rain. The covering materials may consist of tree-leaves two-thirds, fresh stable-litter one-third, which should be thrown into a heap and moistened if it be dry, and then turned over a few times. The same sort of material should be prepared for placing inside the vinery. Thoroughly cleanse the vinery, and put everything into proper order, and keep it as cool as possible. Vines that are to be started next month should now be pruned.

Late Vineries.—Vines that were forwarded by fire-heat in the spring and onward till now, have crops of well-coloured, ripe Grapes, which will keep much later than those that still require fire-heat. Ventilate the vineries freely on favourable occasions, and as the foliage gets mature, let the temperature fall to 50°. A covering of dry, clean straw placed over the inside border will prevent the risk of moisture. Look over the Grapes from time to time for the removal of decayed berries, but if properly ripened, and there is no drip, the Grapes will cause very little trouble. A good supply of the common bracken, if it be plentiful, should be cut for covering late vinery borders, this kind of covering being superior to any other. Grapes not yet ripe must have fire-heat briskly applied by day, with a free circulation of air, and the temperature must not be allowed to fall below 65° at night; and to assist the ripening of shoots keep lateral growths closely stopped.

Soil, &c.—Lay in a good stock of pasture-loam of a friable nature for forming Vine-borders, and place it in narrow ridges so as to throw off rain and snow; and choose a dry time to cut it from the pasture, and do not cut deeper than 3 inches.

Successional Vineries.—These will now be fast cleared of fruits, but they must not be neglected in any way. Too often the borders are allowed to become drier than is good for the Vines. Well fed up now, a Vine recovers from the tax on its energies of carrying a heavy crop of fruit, and lays in a store for a good crop next season. Lightly dig the border, and if the soil is found to be in the least degree dry, apply rain-water, and follow this with an application of rather strong liquid-manure. If only moderately dry, liquid-manure may be applied forthwith. If there are still some bunches hanging, turn on the heat in cold or damp weather, and admit a little air. While the foliage remains green, no severe pruning should be carried out. If the house is filled with Chrysanthemums, and light is desired for these, merely remove the sub-laterals; and cut off the ends of the laterals, or tie them back. The untimely removal of the primary leaves seriously checks root action, and militates against next season's crop accordingly.

"THE GARDENERS' ASSISTANT."—The fourth divisional volume, published by the Gresham Publishing Co., 25, Farringdon Avenue, is before us. It is devoted especially to the fruit and kitchen garden, points in which the original author was supreme. In the beginning we find valuable instructions as to the mode of levelling and draining, instructions the value of which we can appreciate from the difficulty experienced in getting just the information which is here given. A chapter on spraying is a welcome addition, and shows the care that has been taken to bring the work up-to-date. A similar remark applies to the section on marketing Apples and other produce. The illustrations are numerous, and really illustrative; for the most part they are excellent, but in some cases the process blocks, which have now disappeared, are not quite satisfactory as representations of fruits—Apples and Peaches in particular. The book well maintains its place as the best book of reference for the gardener. A vast amount of labour has evidently been expended upon it, but with highly satisfactory results.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to print any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Oct. 8.	Nat. Chrysanthemum Society's Exhibition, at Royal Aquarium, Westminster (6 days).
WEDNESDAY, Oct. 9.	
THURSDAY, Oct. 10.	Annual Dinner of United Hort. Benefit & Provident Society, at Holborn Restaurant, at 6.30 P.M.
	Royal Horticultural Society's Show of British-grown Fruits, at the Crystal Palace, St. John's Road (5 days).

SALES.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, Oct. 7-11—Bulbs, Ac., at Protheroe & Morris' Rooms.

MONDAY, OCT. 7—Bulbs; also Kentias, Seed, Palms, and Flowering Plants, at Mr. Stevens' Rooms.

FRIDAY, OCT. 11—Orchids at Protheroe & Morris' Rooms.

TUESDAY, OCT. 8—Nursery Stock, at The Summerville Nurseries, Sunningdale, by Protheroe & Morris.

WEDNESDAY, OCT. 9—Fruit Tree Sale, at Ferry Hill, Cude near Rochester, by Protheroe & Morris.

THURSDAY and FRIDAY, OCT. 10 and 11—Fruit Trees and Nursery Stock, at The Christened Nursery, Darley Dale, nr. Matlock, Derbyshire, by Protheroe & Morris.

WEDNESDAY and THURSDAY, OCT. 9 and 10—The Vine House Orchids, at Vine House, Haslemere, Lancashire, by Protheroe & Morris.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—62.5

ACTUAL TEMPERATURES:—

LONDON—October 2 (6 P.M.): Max. 66°; Min. 58°; October 3—Fine.

PROVINCES—October 2 (6 P.M.): Max. 62°; Home Counties, Min. 57°; Isle of Skye.

BEFORE the Dahlias give place to the Chrysanthemums, it may be well to note the appearance of two forms of the Dahlia, of both of which we shall certainly see more another season. It is difficult to predict their future, so fickle is public taste. Single Dahlias, which were hailed with acclaim some few years since as a welcome relief from the "lumpy, inelegant" show Dahlias, have already passed out of favour, and are much less numerously shown than was the case some time since.

It will be remembered that the Dahlia is one of the great Composite family, and that its flowers are arranged in heads, like those of the Daisy or Aster. The outer flowers or florets are naturally strap-shaped (ligulate), with no stamens, and only imperfect pistils, and they are arranged in a single row around the central florets, or florets of the disc, as they are called.

These latter florets are very numerous, and contain the stamens and style; each one is tubular, with a shortly divided limb or border. In the case of the so-called single Dahlias, the construction of the flower is not essentially altered. The ray-florets are flattened, and larger than usual, very varied as to colour; the disc florets are in their normal state.

In the show Dahlias, the ray-florets are

much increased in number, and more or less tubular or "quilled." The disc florets are correspondingly diminished in number. The pompons only differ from the show varieties in their smaller size. The Cactus Dahlias, which are the reigning favourites, have the ray-florets elongated and pointed.

Of the newer forms, one termed "Gloria" has the flowers constructed after the same pattern as those in the so-called Anemone Chrysanthemums (see *Gardeners' Chronicle*, January 20, 1883). We say so-called, because the name is quite arbitrary, and there is not the slightest real resemblance to an Anemone. In the Gloria section, of which we have received specimens from Messrs. KEYNES, WILLIAMS & Co., the florets of the disc have their usual structure, but are much larger and more conspicuous than in other sections. We understand that the plants are of dwarf habit, and very free flowering. They were introduced into commerce by SCHMIDT, of Erfurt, but it is supposed that they originated in Italy.

The other form is, we should say, not yet "fixed." Our first record of it dates from 1898 (see *Gardeners' Chronicle*, February 10, 1900). During the last few years we have received at intervals specimens of a more or less monstrous character; and it is only recently that we have met with instances where the monstrous character had become, as it were, tamed and subjected to law and order. The peculiarity in these flowers consists essentially in the development between the ray-florets and the central ones of an intermediate series, intermediate not only in position, but in form also; the florets, in fact, in the specimens we have seen, have not been good ray-florets, nor have they been good disc-florets, but betwixt and between, having something of the shape of the ray-florets of a Gaillardia. These intermediate florets are smaller than the ray-florets, but larger than those of the disc, and they form a sort of collar surrounding the disc. As we have said, we have had several specimens of a similar nature submitted to us as morphological curiosities, but now we find that our Lyons friends have fixed the variation, and are cultivating them under the name of *Dahlias à Collette*, or Collar Dahlias. As the collar-florets are often different in colour from the ray-florets, it will be seen that there are opportunities here for contrasts of colour or harmonies which may become very attractive in the future.

M. CHABANNE, the Secretary of the Horticultural Society of the Rhone, obligingly calls our attention to an article in the *Et Horticulture Nouvelle* by M. GERARD, wherein a description is given of the new race, and especially of one called President Vigier, in which the ray-florets are blood-red and the collar-florets are pure white, with small streaks of red.

Joseph Goujon is another form in which the ray-florets are scarlet, and the collar yellow, faintly streaked with red. Other colour variations are mentioned. We do not suppose these vagaries will please the old-fashioned race of florists; but while there is no desire to deprive them of their points and properties, it is obvious that the flower-loving public welcomes variety and change, and has little sympathy with the too-exacting prescriptions of the orthodox florist.

OLEARIA STELLULATA (Supplementary Illustration).—In Tasmania this shrubby Composite is one of the commonest of native plants, being found not only throughout the island, but at all elevations therein. It has been in cultivation in Britain for forty or fifty years, and although somewhat rare is still met with occasionally—usually under the name of *Olearia Guniana* (see *Gardeners' Chronicle*, May 17, 1890). It is an extremely variable plant in a wild state, and HOOKER in his *Flora of Tasmania* defines six or seven varieties. So far as we have seen, however, the plants under cultivation conform to one type, a portrait of some plants belonging to which is given in the supplement for this week. These specimens, admirably grown and flowered by Messrs. JAS. VEITCH & SONS, show that the species is a shrub of great beauty and grace. Unfortunately, like many other plants from the same region, it is not quite hardy. Near London it may be grown against a south wall, but even there it is liable to be killed in all but the milder winters. In the warmer localities of the south and south-west it will thrive perfectly; and even where the winter temperature is too low it is worth growing out-of-doors in the summer and giving the shelter of a cool house in winter. It requires a light, loamy soil, and can be increased readily enough by cuttings. It is a shrub three feet to five feet high, bushy, with erect branches. The leaves are obovate, $\frac{1}{2}$ -inch to two inches long, coarsely toothed, and dark green on the upper surface. The lower surface, as well as that of the young branches and flower-stalks, is covered with a white, close felt. The character of the flower is well shown in the illustration; the ray florets are pure white, the disc yellow, and the whole flower-head is about one-and-a-half inches across. They are freely produced during late summer in loose, corymbose clusters. Whilst the headquarters of *Olearia stellulata* is Tasmania, the species occurs also in the mountains of Victoria, N. S. Wales, and Queensland, W. J. B.

RHODESIAN REPORTS.—We have received from the British South Africa Company, Reports on the Administration of Rhodesia, 1898-1900. It may well be imagined that the effects of the South African war have not yet been fully felt or realised in Rhodesia; still, it is pleasant to hear that, so far, "the principal result of the year which has seen so much disturbance and trouble in South Africa has been to confirm and strengthen the belief of the settlers, and also of the board of directors and the shareholders, in the reality of the resources of the country. . . . In agriculture cultivation is extending, and live-stock is increasing. . . . In Mashonaland many farms are being occupied and worked by Europeans, locusts disappeared almost entirely in the season of 1898-99, and this happy result is, no doubt, largely attributable to the use of antitoxine. The contentment of the native mind is largely dependent on the excellence of the crops, and in this respect the season of 1900 has been a satisfactory one. From reports received, I (SIR A. LAWLEY) estimate that the native crops this year have been more abundant than in any year since the occupation of the country. As railway facilities increase for the conveyance of farm produce to the various markets, the development of the agricultural industry in this country should be ever increasing. Both at Salisbury and Bulawayo most successful agricultural shows were held in May, and in point of quality and quantity the exhibits were remarkably good. Throughout Rhodesia fruit-trees have been imported in great numbers, and many thousands

of various kinds have been planted. Perhaps the most interesting experiments that are now being made are in the growing of Coffee in Umtali, and of Rubber in the Melssetter districts. Coffee seeds were imported by the Government from Nyasa; they have germinated well, and the young trees are thriving. Mr. KENWICK, of Melssetter, furnishes an interesting report on the possibility of developing a Rubber industry in that country. At present the prospect of successfully establishing such an industry is a matter for conjecture; but there is every reason to hope that Southern Melssetter, from the nature of its soil and its climatic conditions, is a country where this valuable industry may be introduced and conducted on a large scale with every prospect of success. The above sentences are mostly taken from the Report of the Administrator of Matabeleland, Captain the Hon. SIR ARTHUR LAWLEY, K.C.M.G. (resigned), and the sentiments expressed in them are borne out by the reports from North-eastern and from North-western Rhodesia, though over so large an area details naturally vary in the different districts. It should be mentioned that the British South Africa Company is now directly responsible for the administration of the following territories:—1, Southern Rhodesia, or the provinces of Mashonaland and Matabeleland; and 2, Northern Rhodesia, or the whole of the British sphere lying between the Portuguese Settlements, German East Africa, and the Congo Free State, with the exception of the strip of territory forming the British Central Africa Protectorate. If Northern Rhodesia is divided into two provinces—North-eastern Rhodesia, and North-western Rhodesia. The total population of Southern Rhodesia is estimated at 13,265 Europeans, and 149,500 natives. From the brief notes here extracted, some notion may be gathered of the importance of the book before us, which deals with the state and prospects, political and industrial, of our African territories. The reporters seem, on the whole, sanguine that the country is rich in resources, and with inhabitants well qualified to appreciate and to develop them.

NARCISSUS LEEDSII ELAINE.—We understand that Messrs. DICKSONS, of Chester, have secured the whole of the stock of the beautiful *Narcissus Leedsii Elaine*, which was exhibited by the Rev. G. H. ENGLEHART, and received a First-class Certificate from the Royal Horticultural Society in May last.

AN ABERDEENSHIRE FAMILY OF GARDENERS.—MR. JAMES MACDONALD, who for some years has been head-gardener to Mr. JAMES W. CROMBIE, M.P., at Balgowrie Lodge, near Aberdeen, left Aberdeen on Thursday, Aug. 29, to take up the duties of superintendent of parks and gardens at Montrose, being selected from among a large number of applicants. Mr. MACDONALD is a son of Mr. MACDONALD who for forty years has been employed in the forestry department at Castle Newe, Aberdeenshire, and of whose family four sons are now occupying good positions in the gardening world. It is a remarkable coincidence that at the very time Mr. JAMES MACDONALD is taking up his duties at Montrose, his brother, Mr. WILLIAM MACDONALD, enters upon duty at the spacious and well laid-out botanic gardens at New York, a position to which he has been appointed after being for some time employed in the botanic gardens, Edinburgh. Another brother, Mr. CHARLES MACDONALD, is at present in America occupying an important post as gardener in Chatham, Ontario. To his botanical knowledge and gardening ability, Mr. CHARLES also possesses extraordinary neatness of hand. At the World's Fair in

Chicago he gained a diploma for the best hand-writing in a competition open to the world. Another brother is engaged in the forestry department at Castle Newe, where, as stated above, Mr. MACDONALD, senior, has been employed for so many years.

TO RENDER RAFFIA MORE DURABLE.—It is well known that, although raffia has many good points, it has the fault of soon decaying from damp. We now learn that this fault can be overcome by sulphuring the material, i.e., exposing it to the fumes of burning sulphur in a close chest or room, and its durability increased sevenfold. *Illustrirte Flora.*

LILIUM AURATUM.—So many doubts have been expressed as to the really wild state of this noble Lily, that the following note will be read with interest:—

"Through one of the oldest and most respected possessors here, I came in possession of an interesting story, although a sad story, on the latter, in reference to *Lilium auratum*, which certainly will interest the readers of your paper, as it interested me. The gentleman very kindly gave me his experience in writing, and allowed me to publish it, and I give it to you in his own words:—

"In the early part of 1861 I met a gentleman at my father's house who had just returned from China and Japan, and who had brought with him a case of a new variety of Japanese Lily, this was the *Lilium auratum*, and he sold them at one guinea apiece, which wholly or partially covered the cost of his passage home to England. As I was on the point of leaving for Japan, a youth of nineteen, my father, who was a good dealer in horticulturalists, and well versed in Camellia growing, instructed me to get one or two of these bulbs and ship them to Yokohama, and he would be able to dispose of them, he thought, without any difficulty. I arrived here only in July, 1861, after a six months' voyage to a day from Liverpool, and my business of late sent me up to Oshu Sendai early in 1862, at the time of the Restoration. Very few foreigners, of course, had ever been in that part of Japan before, and I found all the bulbs covered with the *Lilium auratum* growing wild, as the *Azalea* does up there, which you seldom find in profusion round Yokohama.

"I never could understand how the old Dutch botanists passed by the *Lilium auratum*; but they seemed to have missed it, whereas it flourished particularly in the neighbourhood of Kanakura when I first came here.

"Well, to make a long story short, I collected, or rather had collected for me, about twenty bulbs, big and little, and some of which were very big, at a cost of 1 cent 4 rin each, and not being able to return myself to Yokohama, I sent them down in a sailing ship my firm had chartered, with instructions to forward them by P. & O. through to Southampton. I had the cases packed, the bulbs being covered with a thin layer of moss earth.

"Unfortunately the summer had been a very rainy one, and the bulbs were very damp. My father ordered to sell the whole lot at from 1s. to 2s. a bulb, and went down to Southampton to take delivery, but to his horror there was not one single bulb left, only lost mould, and I lost my chance of making my fortune this first year.

"Besides this, I lost the freight, which amounted to about 45s. If I remember rightly, My father built a summer-house out of the cases, in which I have sat since; but, needless to say, I gave up exporting Lily-bulbs, though often requested to do so since."

"So far the story of the Lily export in the early days, shortly after Japan was opened to the foreign nations, since then, of course, very many have changed, the price for which one could purchase the bulbs has risen almost ten times, and the reason of this is to get finer and more substantial bulbs. But yet, with all these precautions and improvements, losses among the *Lilium auratum* shipments still happen, especially when the bulbs are shipped at an early date, when the rainy season is still with us.

"The mode of packing has been greatly improved, and principally no more bulbs are shipped which are collected in the mountains, but all are cultivated for one or more years. The reason of this is to get finer and more substantial bulbs. But yet, with all these precautions and improvements, losses among the *Lilium auratum* shipments still happen, especially when the bulbs are shipped at an early date, when the rainy season is still with us.

"We are trying now some new process of packing, and hope that the result will be such that shipments of shipments may be the success. *L. Doehner & Co., Yokohama.*"

CHRYSANTHEMUM SHOW OF THE FRENCH HORTICULTURAL SOCIETY.—The grand Chrysanthemum and flower and fruit show organised

* 1 rin = one-tenth sen.

1 sen = 2 cent.

1 sen = 1 cent U.S. currency.

by the Société Nationale d'Horticulture de France will open on Wednesday, November 6, and close on November 10. It will be held at the Grand Palais des Champs Elysées, which will be illuminated, and will close each day at 6 P.M. The flowering plants and fruit conference, held by the Society on September 26, was chiefly noticeable for the Dahlias. Three fine collections were especially admired: those of Messrs. VILMORIN-AMBREUX ET CIE., of Paris, a large selection containing some fine novelties; of M. PAULET, and of Messrs. CAYETA & LE CRECQ, of Paris, which were also very fine. The following exhibits also deserve notice:—Splendid fruit from M. CHEVILLON, M. CHARLES, M. MICHON, M. GORON, and M. GIRARDON-JOURDAN; and a fine selection of tuberos Begonias from M. ARTHUR HILLARD, of Le Vesinet. G. F. G.

A GOOD EXAMPLE FOR GARDEN-LOVING CLERGY.—Sunday, October 6, will be observed as the Harvest Festival at Shirley, near Croydon. There will be Services at 8.15, 11, 3.15 and 6.30. The offertories will be given to the Gardeners' Royal Benevolent Society—a Society which supports a large number of old gardeners (or their widows) who, through no fault of their own have fallen upon hard times, and who, but for the Society, would have no home but the workhouse. The vicar, as is well known, is particularly interested in the welfare of this Society, and he hopes that, reflecting how largely the harvest of our own gardens depends on the skill and labour of the gardener, all Shirley folk will make a point of coming, and of inducing friends to come as well, or if actually unable to come, will send a liberal offering to so good and appropriate a cause. Who that loves flowers and fruit will not give a kindly thought (accompanied by self-denying action) to those who cultivate these things for their enjoyment?

NATIONAL CHRYSANTHEMUM SOCIETY.—SIR A. K. ROLLETT, M.P., has accepted the office of President of the Society in the place of SIR EDWIN SAUNDERS, deceased, and the new President has signified his willingness to take the chair at the Annual Dinner of the Society, which is fixed for Wednesday, November 27 next, at the Holborn Restaurant.

THE CARDIFF VINEYARDS.—MR. PEITIGREW writes: "This fine weather is ripening the Grapes in the vineyards. My man at the Swanbridge Vineyard brought me in three bunches yesterday to see. They were fine and black, but rather tart yet. I think in the course of a fortnight I shall begin the vintage. There are splendid crops in both vineyards, but the Grapes at Castell Coch, I am sorry to say, are badly mildewed this year."

THE SMITHSONIAN INSTITUTION.—The Annual Report of the Board of Regents of the Smithsonian Institution for the year ending June 30, 1899, is now before us. A chronicle of the operations, expenditure, and condition of the Institution is followed by the usual General Appendix of interesting papers. Among these we notice contributions on:—Some of the latest Achievements of Science, by SIR WILLIAM CROOKES; Growth of Science in the Nineteenth Century, by SIR MICHAEL FOSTER; Petrified Forests of Arizona, by L. F. WARD; Relation of Motion in Animals and Plants to the Electrical Phenomena which are associated with it, by J. BURDON-SANDERSON; The Garden and its Development, by DR. PAUL FALKENBERG. The author of this latter paper considers that in the Homeric age gardens were only valued as being fruitful and therefore useful. "The Romans from the time of the end of the Republic followed the example of

laculus and bedecked the hills on both sides of the Tiber with the luxurious gardens and country villas of the rich." From Italy, gardening (properly so-called) was introduced into Germany, thence to France, Holland, and other countries, in each of which the art was modified according to its environment. The constantly increasing number of travellers led to interchange and more general dispersal of plants and modern gardening, whether considered as regards private plantations, public parks, or botanical and horticultural institutions, is a gradual development and natural outcome of all past work, initiated in various countries and influenced by different standards of art.

MR. GEO. FENNEL.—After a term of thirty years' service as head gardener at Fairlawn, Cambridge, the residence of W. M. CAZALET, Esq., MR. GEO. FENNEL has resigned charge of this interesting historical place. During his long period of service, MR. FENNEL has carried out many extensions and improvements, and he can look back upon a period of considerable activity, and earnest devotion to the work opportunity found him to do. The good wishes of many old friends will follow Mr. FENNEL into his retirement.

DOUBLE-FLOWERED PEACH-TREE WITH FRUIT.—A perfect fruit of the Peach is sent us by MR. ALBERT HULMAN, Ersham, Littleham, who states that he gathered the specimen from a tree of the double, pink-flowered, ornamental variety. The fruit is greenish-yellow in colour, of moderate size for a Peach, and tolerable flavour. The stone and seed are perfect. We do not recollect a similar occurrence, but unless a flower is wholly double, and has no essential organs, there is the possibility of fertility.

NEW ROSE: ROSE MADAME JEAN DUPUY (TEA).—A new Tea Rose under this name is being put into commerce by M. PETER LAMBERT, of Trèves. The plant is a strong grower, habit bushy, foliage handsome, shoots almost destitute of thorns, the flowers large, of good substance, well-formed, pointed; bud long, hazel-nut shaped, opens freely, and stalk firm, of good length, and straight. Flower of a reddish-golden yellow in the middle, changing to rosy-yellow and creamy-white towards the margin; the outermost petals strongly edged with rose. Very floriferous. Forces well, and is said to excel Francisca Kruger in every point.

CHRYSANTHEMUM RUST.—In a recent number of *La Chrysanthème* (Lyons), M. CHIFFLET has a paper on Chrysanthemum Rust, which he mentions as having been described and discussed in the *Gardeners' Chronicle* in October, 1897, by Mr. MASSEE, of Kew. The disease has spread so rapidly from England through France that now almost all Chrysanthemum growers are threatened. Among different names given to the fungus are those of *Fredo Chrysanthemi*, *Puccinia Hieracii*, *P. compositarum*, and *P. Chrysanthemi*. In any case this pest is allied to *P. malvacearum*, and is causing no small disturbance. M. CHIFFLET suggests three ways of dealing with it—1st. Winter treatment. After the flowering of Chrysanthemums, the leaves fade and fall. It is then that the leaves of affected plants should be carefully collected and burnt, to prevent germination in spring of the winter spores contained in the last-formed masses. The surface-soil of the pots should be dusted over when the old stems are cut down and burnt, with a solution of pentasulphide of potassium, from 3 to 4 grammes per 1,000 of water; this is harmless to the plants,

but kills the winter spores. 2nd. Spring treatment. Chrysanthemum growers who advocate late propagation should select shoots not affected with rust, and before putting them under glass should plunge them in the above-named solution. When the striking is effected, both sides of the leaves should be examined to see if they are free from disease before they are set out in the open ground. On putting them in place, powder thoroughly with pentasulphide over the young shoots and over the soil. Advocates of early propagation should include this process in the winter treatment. These two treatments must be effected with great care. As soon as a leaf shows a trace of disease it must be snipped out and burnt. 3rd. Summer treatment. It is now that the masses or pustules form rapidly, and the ureospores germinate most easily. Growers should give daily careful attention to the foliage of their favourite plants. A single contaminated specimen will infect the whole collection, and this liability is the reason why large plantations are rarely free from rust. The gathering and burning of rusted leaves, powdering with pentasulphide (3 to 4 grammes per 1,000 of water) monthly over both surfaces of the leaves, and on the soil itself, prove the best remedies, or rather preventive measures, which alone can prevent rust. Little or nothing can be done to save plants that have been allowed to become seriously diseased; and treatment should not be delayed until rust has already appeared.

BARK-STRIPPING.—A short time since some strips of Larch-bark were sent to us, with a request for information. The rectangular strips were 1 or 2 inches long, quarter to half an inch wide, very regular and straight-edged. Squirrels were at once thought of, but we had never seen an injury of this kind effected by these animals, nor had the members of the Scientific Committee, to whom they were submitted. Nuthatches were suggested, but now the culprits have been seen at work, and turn out to be as at first suspected—squirrels. Mr. ROTHLEY, gr. to O. O. WINDLEY, Esq., Wansfell, Windermere, writes:—"The speed with which they can tear off the bark would greatly astonish anyone. They have destroyed about 350 trees, ranging from 25 to 35 feet high, and some of them are stripped 7 and 8 feet down, and the whole of them appear to have been attacked some 5 feet from the top. Their object is no doubt food, for they scrape off the glutinous substance between the bark and the wood."

BROCKWELL PARK, S.E.—We have on several occasions drawn attention to this London park in S.E. London, and recognised that the scheme would not be complete unless some 42 acres of freely wooded land adjoining were added to it. A committee was appointed to consider the question, and recently the addition was made by the acquisition by purchase for 566,000 of the long-coveted woodland. All concerned here are to be congratulated on the successful termination of so excellent a scheme.

"JOURNAL D'AGRICULTURE TROPICALE."—This is a new-comer in the world of journals, for it was published first on July 31, under the auspices of M. J. VILHAINCHENTRU, to whom, at 10, Rue Delambre, Paris, all communications are to be addressed. According to the prospectus, the journal is to be international—that is to say, it is to circulate in every tropical country where the French language predominates; in the French and Portuguese colonies, the Belgian Congo, Mexico, and Brazil; in the Spanish Central American Republics, in Cuba, Porto Rico, Egypt, and

Mauritius. It is claimed that English, German, and Dutch intercolonial journals exist, and that the present venture is to encourage similar facilities of intercourse between French colonies, and also between France, Belgium, Spain, Italy, Portugal, and Switzerland. In the first number of the periodical are papers on:—*Le Chanvre de Sisal et les autres Agaves textiles*, *Maçhines à défilrer le Honequen ou Chanvre de Sisal*, and other subjects of agricultural and commercial interest. We wish the new venture every success.

CHEAP AND SERVICEABLE.—The *Garten-Welt* gives an illustration of a contrivance for procuring a bath which might well be copied in any large garden, and would be a great comfort in hot weather. The bather stands on a wooden lattice footboard, enclosed within four walls of tiffany or canvas supported on stakes. A tall pole in the middle supports the hose, under which the bather stands and thus gets a refreshing shower-bath. The illustration shows a water-pot as the source of supply, but the nozzle of the hose with the top within reach of the bather would be even better. The whole contrivance could be erected and removed after use within a few minutes.

CASSELL'S "DICTIONARY OF GARDENING" has now reached the article "Correa." It is nicely got up; the information given is accurate, up-to-date, and sufficiently comprehensive to meet the requirements of amateurs and the general body of gardeners.

"THE FRUIT TRADE NEWS."—This is described as a new paper, but it would seem rather to be the lineal descendant of an old one, for it is numbered as No. 413 of the old series and No. 1 of the new. It is published weekly at one penny, and is devoted to the interest of growers and salesmen in the fruit markets. Market notes, cultural notes, portraits of prominent fruit salesmen, and all things are treated on which are likely to promote the extension of the profitable culture of fruits, vegetables, and flowers in the rural districts of England (Britain). We notice that the two best market Apples are pronounced to be White Transparent and Cox's Orange Pippin. The paper is well calculated to fulfil the objects for which it is established. The publishing office is at 30, Fleet Street, E.C.

THE GERMAN DENDROLOGICAL SOCIETY.—We condense the following particulars from the *Deutsche Gärtner Zeitung*. The annual meeting of the German Dendrological Society was held this year at Munich, and was opened by the President, HOF-MARSHALL VON ST. PAUL, on August 7. Herr Garteninspektor PERLES showed a large number of new and rare trees from the Botanic Garden at Darmstadt. Some of these specimens were the young plants themselves, others freshly cut branches. The most noteworthy were *Gleditsia texana*, *Diervilla rivularis*, *Betula globispica*, *Comus Bretschneideri*, *Acanthopanax divaricatum*, *Carya texana*, *Pinus ostosperma*, *Eucymnus oxyphylla*, *Ribes magallanicum*, the true *Viburnum barbatifolium*, *Lonicera conjungialis*, *Spiraea cespitosa*, *Indigofera Potanini*, and different species of Oaks. On August 8 proceedings were opened by Professor MAYR, who read a report on Japanese trees in their old and new homes. He depicted in a striking manner the circumstances under which trees introduced from Japan for the purposes of forestry have prospered. He showed how from the planting of certain species from the Japanese flora in corresponding zones tolerably safe deductions may be drawn as to their success in our country (that

is, Germany). He further mentioned that in an average temperature of 10 C. = 8 R., no forest succeeds ever so little if the average humidity of the atmosphere sinks below 50 per cent. in summer. Rainfall has, in the cultivation of forests, a far less amount of influence than the moisture of the atmosphere, and the condition of the soil plays also a secondary part. The protection of older trees exercise also a great influence on the growth of the young plants, for, as the young plants in a forest enjoy this protection, so also must it be afforded to them when they are under cultivation. They will then be guarded against breakage by snow to which in Germany, where snow often falls when the temperature is above freezing-point, foreign

drastis amurensis, and *Cryptomeria japonica*. Zelkova Keaki, which belongs to the region of the noble Chestnut, only occurs in the warmer parts of Germany. Professor MAYR then went on to the consideration of single species, with reference to their forest and botanical importance. As to the so-called acclimatisation of plants, he is of opinion that acclimatisation—that is, an adaptation to other climatic conditions—does not exist, and instances the Walnut, which, in spite of thousands of years of cultivation in severe climates, has not yet been acclimatised. There may well be individual fluctuations in relation to severity of frost and periods of vegetation, but the adaptation of one species to another climate is, so far, by no means assured.

purer air, hardy flowers are induced to grow, and Runner Beans, Marrows, and other vegetables actually ripen their fruit within a few yards of some of the busiest thoroughfares.

PUBLICATIONS RECEIVED.—*Bulletin of the Botanical Department, Jamaica, August.* Contents: Fungoid Diseases of Cocoa, Australian Braziletto, and miscellaneous notes.—*Journal of the Department of Agriculture of Western Australia, July.* Among the contents are contributions dealing with: Possibilities of Tropical Agriculture in the North-West, Insectivorous Birds of Western Australia, Orchard Inspection, Fruit Tree Pruning, Wheat, Lucerne, Garden Notes.—From the Michigan State Agricultural College Experiment Station Chemical Department, *Fertilizer Analyses*, by R. C. Kedzie. *Bollettino del Instituto Fisiologico Geografico de Costa Rica, No. 7.*—*Nuovo Giornale Botanico Italiano, July.*—From the Natural History Society of Romania (Societatei Naturalistilor), *Monograph (illustrated) on Oplrys Coraudi*, a rare indigenous species.

STRICKLANDIA EUCROSIODES.

LAST autumn my collection was enriched by the gift from Mr. Elwes of a bulb of the above species, which has lately been in flower.

This plant has excited at times considerable interest among botanists, and has been by them referred to four different genera, viz.:—*Stricklandia*, *Leperiza*, *Stenomesson*, and *Phadrassia*. Even now it is at least doubtful whether the resources of the science have been exhausted without a fresh reference to the genus *Eucrosia*.

Mr. Baker divides *Stricklandia* from *Eucrosia* by the shorter and straight stamens of the former compared with the longer and declinate stamens of the latter.

However, in my specimen of *Stricklandia*, the stamens show a distinct inclination to become declinate, and doubtless, from their slender nature, they must surely fall into the declinate posture affected by the stamens of *Eucrosia*, had they the same length to support. Hence, we must fall back merely upon the difference in length of the stamens to support the contention of two genera.

However, Mr. Weathers, when examining *Stricklandia*, pointed out to me another botanical line of divergence in the biseriata positions of the callose bases of the stamens. In *Stricklandia* these are attached to the throat of the tube in two ranks, alternately, at two different levels. In *Eucrosia*, as shown in the detail drawing in *Bot. Rey.*, 207, they are all affixed in one rank at the same level; and, in the letterpress, it is remarked by Ker as a point upon which he was then founding the genus *Eucrosia*, that the same differed from *Pauernatum*, &c., in the "six glandular corpuscles subtending the bases of the filaments not alternating with them (?) like the scales in some *Amaryllidæ*" (see fig. 78).

This interesting point will go a long way with many botanists in confirming the genus *Stricklandia*; yet, on the other hand, we should not overlook the fact that it may not prove desirable to exaggerate minute technical differences into those broad lines of subdivision which should exist between genera. In the subject of this drawing (fig. 78) the overall height is about 1 foot, the flowers coral-red, with a short green tube, and inodorous. The flowering period lasts about one month. The whole inflorescence is rigid and wiry, although it appears so slender. I may note that Herbert was not all in love with the drawings of *Eucrosia* in the *Botanical Register and Botanical Magazine*. The former was "far from correct," and the coloration in the latter case "quite incorrect." A. Worley, Isleworth.



FIG. 78.—*STRICKLANDIA EUCROSIODES*:
FLOWERS CORAL-RED.

Creeps are subjected. Animal and vegetable enemies likewise require much study. Dr. MAYR divides the Japanese trees for this climate into four zones. The under-woods (thickets) of the first, the low Pines, *Pinus pumila*, &c., are unimportant from a forester's point of view. The region of the Pines and Firs, on the contrary, contains numerous hardy and flourishing trees, such as *Abies sachalinensis*, *A. Mariesii*, and *A. homolepis* (syn. *A. brachyphylla*), *Picea hondoensis*, *P. ajanensis*, *P. glehnii*, *P. bicolor* (syn. *P. Alcockiana*), and *P. polita*; also *Larix leptolepis* and *L. kurilensis*, as well as *Pinus Thunbergii*, *P. densiflora*, *Chamaecyparis pisifera*, and *C. obtusa*. In the Beech zone occur *Magnolia hypoleuca*, *Phellodendron amurense*, *Cl-*

CITY GARDENS.—The love of gardening is manifest in the heart of London as in the country, and drawbacks merely seem to lead to renewed efforts. A recent issue of the *City Press* mentions the garden of Mr. LOCKHART, Steward of Christ's Hospital, at his residence, 67, Little Britain, where Ferns, creepers, and that useful town plant the Fig-tree, not merely grow, but flourish. When the pending removal of the establishment to Hورشam takes place, Mr. LOCKHART intends to take his greatest treasures with him. This is by no means an isolated instance of gardening under difficulties, as a search among the quiet courts of the city soon proves, gardens on leads and house-tops being also more general than is supposed. Thus raised into comparatively

HOME CORRESPONDENCE.

WASPS.—If not too late to be carried out this season, I should like to advise all who have set themselves to work to reduce wasps by destroying their nests with potassium cyanide, or other similar methods, not to be satisfied with the work without afterwards digging them out and burning them. At the present time we have under observation under a bell-glass a nest treated with potassium cyanide, and amongst the brood hatched since dug out, there are from sixty to one hundred queen wasps, whose mission was doubtless, after hibernating, to produce similar nests next season. In the ordinary course, half probably would have survived, making a very undesirable increase. It is doubtful whether this particular nest will meet with such success, being in very safe keeping; but there is no mistake about the numbers, sex, and vitality of the colony, indicating what was intended, which also proves that more severe measures are necessary for their complete destruction. *R. C. Sanders, Halton, Aylesbury.*

RINGING OF FRUIT-TREES.—The ringing of herbaceous plants may be of physiological importance, but it is a question whether it can ever be largely adopted in practice, although, as we gather from the results of certain experiments (see p. 264) upon some Cruciferous and Solanaceous plants, certain advantages may be gained. Ringing is largely practised for the purposes of propagation; and ringing, twisting, and notching are still carried on in some places on fruit-trees to induce greater fruitfulness, although not so much as formerly. Under modern systems of cultivation, it has to a great extent become unnecessary; although in certain instances it may prove useful, and for the purposes of experiment and research, very interesting. Towards the end of September, 1900, I visited Earl Fitzwilliam's extensive gardens at Wentworth-Woodhouse, and I noticed there some bush Pear-trees which had been treated in this way. At the base of one or two of the branches on each tree a ring of cortex and bast, at least about 1-inch in width, had been removed; this had never healed over. Mr. J. Hughes, the head-gardener, informed me this operation had been performed quite ten years before. The ringed branches were still carrying nice crops of fruit, while there were scarcely any upon the rest of the bush. At this time also the leaves upon the ringed branches were strongly developing their bright autumnal tints, while the other leaves were still quite green. Also these were well set with flower-buds upon short perhaps rather weakly shoots, while the other branches were of much stronger growth, but showed no signs of fruitfulness; the life of these ringed branches would be much shorter than those upon the same bush, and which had not been treated so roughly. In a small garden in the parish of Hinderwell, on the Yorkshire coast, some of the branches of Pear-trees on a wall some time ago were treated in the same way with similar results. The removal of rings of cortex and bast upon a few of the branches upon a tree such as I have just described, is a much better practice than ringing the whole, or even the stem, especially if the rings are too broad to be healed over. The outermost layers of wood upon the ringed portion become exposed, and subjected to drying influences; much of the surface woody tissue is destroyed, and by evaporation the upward current of water is much weakened, no more annual rings are formed, the branches gradually become weaker and weaker, until they eventually die. The branches which have not been ringed, in the meanwhile are strong and vigorous, the upward conducting currents free and continuous, the leaves in full working order with full supplies. Thus the roots receive a sufficiency of elaborated food material, which will enable them to perform their full share of the work of the tree, and keep

the ringed branches better supplied with raw material. Of course, no practical man would ever think of cutting out such broad rings from the whole of the branches, or the stem, as by the complete severance of the fibres of the bast, the supplies of food from the leaves would be cut off from those portions of the stem below the ring and the roots, and all above the ring would soon die. I have sometimes seen stem-ringing practised when a very narrow ring of cortex and bast has been removed, say possibly about an eighth of an inch. If this is done during the period of great cambial activity, before the leaves unfold very much, about the grafting season, the operation is comparatively a very safe one, especially if the wound is protected from drying influences by an india-rubber band, or some protective material during the healing process. But after all is said or done, ringing is an unnatural and drastic operation, and cannot be generally recommended in practice. Much better results can be obtained by skillful and judicious pruning, bending and depressing the branches of unfruitful trees, root-pruning, and general good fillage; and when also we consider that in these days there is such a choice of stocks for grafting purposes that this, combined with good general cultivation, an early and general productiveness of fruits can be ensured, without disfiguring the trees by ringing. *Alfred Gunt.*

DIAMOND JUBILEE GRAPE.—In a recent issue, "A." refers to the action taken by the Chairman of the Royal Horticultural Society and "two of his colleagues" in expressing their opinion of the above Grape as shown at Glasgow. I believe I am one of the "two." I admit I know nothing whatever of the variety, but on comparing it with Black Morocco as there shown, a Grape I have known and rejected years ago, I had no hesitation in saying it was not only distinct, but also a great improvement on that variety. Why does not "A." try and grow both before he is so severe in condemning a new—or supposed new—introduction? Has "A." ever grown either? *Richard Parker, Goodwood.*

BURNED PATCHES ON LAWS.—In the *Gardeners' Chronicle* a few weeks ago, someone asks how to prevent the horse's stale from staining or burning the grass. The horse, I understood, was the one used to draw the mowing-machine. We got over this at Combe, by now and then in the course of the day, unhooking the horse from the machine, and walking him to the nearest grating in the garden walks. The horse soon got quite to know this move, which answered capitally. *W. M.*

OCTOBER.—
 "When autumn bleak and sunburnt do appear,
 With his gold hand gilding the fallen leaf,
 Bringing up winter to fulfil the year,
 Bringing upon his back the riped sheaf."
Chatterton.
 "Wife, some time this weeke, if the weather
 is cleare,
 Our end of Wheat-sowing we make for this
 year;
 Remember you, therefore, though I do it not,
 The seed-cake, the pasties, the Furmentie
 foot."
Tusser, 1580.
 "A good October and a good blast,
 To blow the hogs corn and mast."
 "If the Oak bear much mast, it foreshows a
 long and hard winter."
 "Many hips and haws,
 Many frosts and snaws."
 "Many haws,
 Many maws;
 Many Sloes,
 Many cold toes."
J. C.

SOME WEATHER VAGARIES OF 1901.—On August 11 at Packington Hall, about four miles from here, a most damaging shower of hail occurred, doing much injury to the Apple crop, which for this season was exceptionally good, and much fruit will be lost. The upper

surfaces of the fruits were covered with indentations, wounds, and bruises; and only a few of the second quality of fruits escaped injury, which were situated on the lower parts of the trees. The disaster is the more lamentable seeing that the season was so far advanced, and the fruit developed nearly of full size. A good deal of the glass in the gardens was broken. Trees were divested of much of their foliage, and what was left was riddled. A fine proportionately-grown *Salisbury adiantifolia*, now known by the old and far less poetic name of *Ginkgo biloba*, suffered severely; the leaves were not riddled, as were softer-leaved trees, but simply broken off, and lie in heaps on the ground. Since that date and up to August 25, we have had for the third time this year a return of the great heat-wave, which will make the summer of 1901 much to be remembered, more especially amongst those farmers who unfortunately cultivated within the area of those unkindly climatic influences, which for them mean a thin and lean year. On Sunday, August 25, the forepart of the day was excessively hot and sultry, but about 4 p.m. the sky became clouded over all of a sudden, then followed much thunder, with wind, and a very welcome downpour of rain, but thank goodness, without the accompaniment of hail. Two Beauty of Bath Apples, the only two on a very young tree (which I had been watching daily, were shaken off. I brought them in and placed them beside two Cellini's, perfectly plump and fresh, which had been in my cellar, a dry and cold one, ever since the last autumn of the nineteenth century. The two respectable representative specimens are now before me, the one of the nineteenth and the other of the twentieth century, a coincidence in the Apple line not likely soon to happen again. On August 26, we had a continuation of the storm of thunder, lightning, rain, and high winds, and more Apples were blown down; but the rain did much good to the parched-up pastures, and also gave a fillip to the swelling up of such roots as Turnips, Mangold-Wurzels, Carrots, Parsnips, &c. Rain always produces a magic-like effect upon dry and thirsty land, and also very similar upon ourselves, for after a copious downfall of rain, we often find that much of our fears as to the jeopardy of our crops were in a great measure groundless, and that we are not going to be so seriously hit after all. Until late in the day, the cattle sought shelter from the sun under the trees. *W. Miller, Beckerswell.*

GERMINATION OF THE SEEDS OF THE CHRYSANTHEMUM.—It is usually thought that given good and fresh seed of the Chrysanthemum, it will vegetate in a few days after being sown, and indeed the first rough leaf appears in about three weeks. Upon one occasion some seedlings appeared on the eleventh day, which is the quickest case that I remember. This year I have had an experience just the reverse of this, which I am unable to account for. On December 29 last year I gathered two seed vessels, one containing no good seed, and the other some five or six, which seemed to be quite good germinating seeds. Besides these there were one or two others so small and insignificant, that I did not regard them as being capable of germinating. The whole of the seeds were sown the following day, December 30. Three weeks later one strong seedling appeared, and was shortly afterwards potted. For several months no other seedling appeared, and I concluded that those I had regarded as being fertile were not so and had perished. The seed-pot was, however, not discarded, and in June, that is, nearly six months later, four other seedlings appeared, which were also potted. I still retained the seed-pot, and six weeks later four more seedlings put in an appearance, which were also potted, and the seed-pot returned again to its place. Three weeks ago, however, another seedling appeared, and while this was still gaining strength enough to necessitate potting singly, two others showed above the soil, and are showing the first signs of the rough leaf in the centre of the cotyledon.

This gives the total of a dozen seeds, all taken from one head of seed, and all good, judging by subsequent growth, taking from three weeks to nearly nine months to make a start, and there may yet be more left in the pot. This case of tardy germination of quite fresh seed should act as a caution to those about to throw away seed-pots of Chrysanthemums. *E. H. Jenkins, Hampton Hill.*

PAUL'S SINGLE WHITE ROSE.—Mention is made, on p. 200, of this Rose being in bloom sometimes in the autumn. At the present time it is flowering profusely in the shrubberies at Aldenham, where Mr. Beckett trains it up poles to a height of 12 feet or more. With him it flowers all the summer and well into the autumn; he looks upon this as quite one of the best of single-flowered varieties. *E. M.*

BOOK NOTICE.

THE BOOK OF ASPARAGUS. By C. Hott, F.R.H.S. (John Lane, The Bodley Head; London and New York, McMillan.)

THIS is the first of a series of handbooks, as the editor, Mr. Harry Roberts, states in his preface, which deal from a purely practical standpoint with the culture of the various fruits, vegetables, and flowers which are grown, or might advantageously be grown, in English gardens. The author is Mr. C. Hott, who has for forty years been engaged in the study and cultivation of the vegetables on which he now writes. Recently he has been engaged by the County Council of Cornwall in experimenting on a large scale, with a view to determining the most suitable crops for cultivation in that county, and the best methods of cultivating them. The methods of Asparagus-cultivation, taken in their entirety, embody the practice of the best English and French cultivators, with a preference to such as are best adapted to our climate and the demands of the consumer. The Asparagus plant is treated of from the first step, the site of and preparation of the seed-bed, full instructions being given in language anyone can understand and carry out. Writing of cutting the heads, he remarks: "About the middle of February a few inches of the surrounding soil should be thrown up over the crowns, and for this purpose a top dressing of sand is helpful to add with the soil for earthing, as, when the gathering commences, the little hill over each crown can be drawn down, and instead of an Asparagus-knife being used, the shoot can be broken off by the fingers." He prefers an old pruning-knife to the Asparagus-knife.

We doubt if anyone, no matter in what county he lived, could fall short of success in Asparagus-culture who carefully carried out the instructions Mr. Hott gives in the *Book of Asparagus*. Nevertheless, the climate, soil, abundance of suitable manure in sea-weed thrown up on the beach, and the always readily available sea-sand, will help to give certain parts of Cornwall contiguous to the sea a pre-eminence in the cultivation of Asparagus.

The handbook contains, besides the chapters on Asparagus, others on the cultivation of Celery, Celeriac, Scorzoneria, Salsify, and Sea-kale, all of them kinds of vegetables adapted to the Cornish climate.

TRADE NOTICES.

ORCHARD COMPANY (SCOTBY), LIMITED.—This company has been registered by Jordan & Sons, Ltd., 120, Chancery Lane, W.C., with a capital of £10,000 in £1 shares. Object, to acquire and take over as a going concern the property and business of a fruit-grower, nurseryman, horticulturist, and florist, carried on at Scotby, Cumberland, by A. Macintosh, as the Orchard Company, Scotby, and generally to carry on the business of fruit-growers and

nurserymen, both wholesale and retail, as importers and exporters, &c., either at Scotby or elsewhere. The signatories are: A. Macintosh, 8, Warwick Square, Carlisle, corn buyer; J. X. Carr, Carlisle, biscuit manufacturer; C. Long, Waudales, Wetherall, corn merchant; W. Latimer, The Pines, St. James' Road, Carlisle, joiner; J. Davidson, 8, Murrell Hill, Carlisle, clerk; R. J. Steel, Bank Chambers, Carlisle, solicitor; G. A. Lightfoot, 23, Lother Street, Carlisle, solicitor. No initial public issue. The first directors (to number not fewer than three, nor more than seven) are A. Macintosh, J. X. Carr, and W. Latimer. Qualification, £100. Remuneration to be fixed by the company. Registered office, Scotby, Cumberland.

of its richly coloured Carnation-like flowers find a place on the same wall.

We may add, that the neighbourhood of Poole enjoys particularly mild winters, and Lytchett used to boast of a large plantation of *Camellia japonica*, which may still be in existence for aught we know of to the contrary.

LAW NOTE.

A TASTE FOR ORCHIDS.

JAMES HORATIO RAND, provision merchant and commission agent, of Cliffe Lane, Baildon, appeared before the Registrar of the Leeds Bankruptcy Court on Tuesday for his public examination, with total liabilities of £1,932, and a deficiency of £1,755. The bankrupt, who attributed his failure in part to "money expended on greenhouses," had, in addition to spending £3,000 on their construction, and in laying out his grounds, got rid of £2,000 "in Orchids and other plants." The examination was adjourned for the production of a cash account.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

SEPTEMBER 22. *Present.* Dr. M. T. Masters, F.R.S., in the chair. Messrs. Houston, Chapman, Odell, Sanderson, Worley, and Douglas, Dr. M. C. Cooke, Paul, A. H. Church, Rev. A. W. Wicks, and Rev. G. Henslow, from Scotby, Scotland; Mr. Gray-Lay, and Mr. Pickett from Australia.

Mr. Henslow's Report.—Mr. Henslow showed plants resulting from *Phlox* embryos growing from one grain. A similar phenomenon was not uncommon in the *Meribala* *Azoreana*.

Mr. Hott's Report.—Mr. Hott brought samples of the damage, which was quite brown. It was returned to Dr. Cooke for examination and report.

Mr. Sanderson's Report.—Mr. SANDERSON showed an Oak leaf lacying-out gall. "These are formed by galls from eggs laid by *Spathegaster Taschenbergi*, which would produce a parthenogenetic generation of gall flies known as *Dytophanta setularis* in January or February. These would lay their eggs in the buds of the Oak, and small, somewhat conical galls would be formed. From these the sexual generation, *Spathegaster Taschenbergi*, would emerge in July. These galls are common, but are usually found singly on the leaves."

Mr. Gray-Lay's Report.—Mr. GRAY-LAY exhibited a spray of three flowers, in all of which two sepals had yellow streaks occupying half their surface, thus slightly obscuring the colouring of the labellum.

Mr. Worley's Report.—He also showed a small imported plant of this genus which had not been potted for eighteen months, but had sent out a flower from the terminal shoot.

Spots on Orchid leaves.—Mr. GRAY-LAY read several communications from Mr. Henslow on this subject, he has traced the spots to a fungus, of which photo-micrographic illustrations were shown; but as his researches are not completed, a further communication is looked for. The fungus appears to be allied to *Gloeosporium*.

Schaeferia malle with Fungus.—Mr. BOSWELL sent leaves attacked by Fungus. Mr. Pickett said it was frequently grown in Australia, and that it like much warmth. In cold districts it often gets black.

Hybrid Tomatoes.—Mr. WORLEY showed some very fine specimens of Tomatoes, the result of crossing the Grape-Tomato with a red garden form. The hybrid was remarkable for the number of fruits borne by it, some twenty five being on one branch; on another were two closely arranged rows of fruit. Another hybrid was between an egg-shaped Tomato and the Grape Tomato as male parent, the fruits were not large, but well shaped.

Tropaeolum Hybrid.—He also showed flowers of *T. Lobbianum* × *magus*, which were intermediate in character between the parents.

Agrostis umbellatus.—Mr. WORLEY also showed a flower of this plant with ten leaves to the perianth, from symmetrical increase.

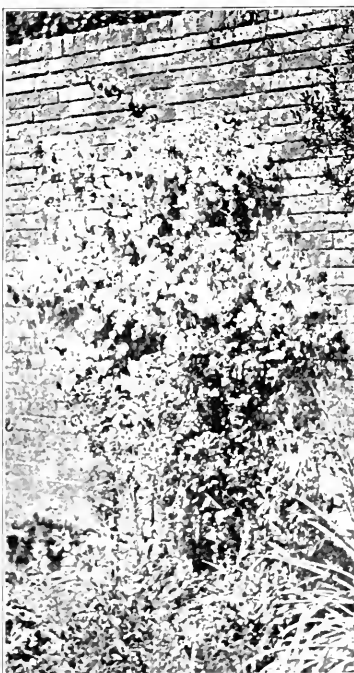


FIG. 79. BOUGAINVILLEA GLABRA IN SIR ELLIOTT LEES' GARDEN, SOUTH-EAST LITTLE MARJOR, POOLE.

BOUGAINVILLEA GLABRA.

This plant is so commonly met with in greenhouses in this country that few persons ever think of growing it on warm positions out-of-doors; and yet this may be successfully accomplished in the warmer parts of the country. Our illustration (fig. 79) shows a capital example of floriferousness, growing on a wall having a south-eastern aspect, in the garden of Sir Elliott Lees, Bart., Lytchett Manor, Poole. The plant, as Mr. G. Daneu, Sir Elliott's gardener, writes us, was removed from an unheated greenhouse last March and planted in its present position. Soon afterwards a frost occurred sufficiently severe to enrust the ground around the plant, and it was feared that it was destroyed; indeed, no sign of life could be observed till the month of May. Subsequently it made rapid growth, and was at the end of August a mass of rosy-crimson coloured bracts, of a deeper tint than those on plants having glass protection. A *Fabiana imbricata* of great age, and a *Pomegranate*, which annually produces quantities

Walsmia Adernei.—MR. MASTERS showed, on behalf of Messrs. Wallace, leaves of this plant, which are remarkable for being quite incapable of bearing the least larvage without injury.

Beech-lice Bug.—MR. BERRIDGE sent a sample of this well-known pest, *Adelges fagi*, exceedingly common this year. He wrote as follows:—"The specimen came from Croxford, where trees 12 feet in circumference have perished. We have it in Dublin on the stem of a Weeping Beech, in the College garden. This stem is of the common Beech, and the weeping variety is grafted upon it, about 5 feet above ground. The *Adelges* only infests the bark of the stock up as high as the graft line, and does not spread or live on the scion or weeping variety above the graft-line." Mr. Berridge refers to an opinion that this insect never attacks the purple Beech—an undoubted error, as a large tree of this kind died at Ealing in 1888 from it, in the secretary's garden.

Plane-tree Leaves Diseased.—MR. BERRIDGE also sent leaves of this tree attacked by *Fumago*. Several other plants, he observes, are similarly attacked by it.

Polliferous Barley.—He also sent specimens of Barley with extra-short ears at the base, imitating the so-called "Egyptian Wheat." They appeared among a crop of Chevalier. He raised the question whether it could have resulted from a cross with the six-rowed Barley; but without experiment this could not be decided. Possibilities would seem, however, to be averse to this view, as no such crossing would apply to profluous Wood and other cereals, or to Plantains in which it is of common occurrence.

Tranvaux sp. Disease.—DR. M. C. COOKE reported upon specimens sent to the last meeting by Mr. Vetch: "Plum and Cherry and some other orchard trees—suffer from the attacks of what are, apparently, round parasites. These are in the form of a white mycelium, which grows between the bark and wood, and ultimately kills the tree. This is presumed to be the mycelium of some *Agaric*, probably growing in the vicinity of the tree, first attacking the roof, and then proceeding upwards beneath the bark. From the mycelium alone it is impossible to determine the species, but, in such cases, it should be noted whether any *Agarics* are growing in the neighbourhood of the diseased tree, such, for instance, as *Collybia fusipes*. Berkeley, in the pages of the *Quarterly Chronicle*, often directed attention to these 'root fungi,' and commented upon their injurious influence. It may be true that they are originally saprophytes, or the mycelium of saprophytes, but they may become parasitic under certain conditions. I expressed this opinion some years since in connection with Conifers in the neighbourhood of Edinburgh, in a case brought for trial in the High Court, but an opposing witness declared the mycelium to be only a saprophyte, and unable to cause an injury. Subsequent investigations in Germany and elsewhere have confirmed my opinion."

Helianthus hybrid.—MR. BULLIAMS sent flowers of a supposed hybrid between the perennial and annual species of this genus. He observes:—"The seed-bearing parent has an annual variety (this I have no doubt about), and therefore am able to send a flower of it; but I send also the *Harpalium* and *H. multiflorus*, together with blossoms of the two seedlings, one of which grew to a height of seven, the other to that of four feet. For years I have been crossing varieties of the annual *Sunflower*. I then began to cross the annual with any of the perennial species, and I have no doubt from the results about some of them being true crosses; the seed parent being the annual species. The off-pring never stood the winter, so I was unable to perpetuate them. Two years ago I fertilised the annual species with *Harpalium*, and possibly with *H. multiflorus* (that point I am not quite certain about). I sowed the seed, and the result was three plants, two which grew about 7 feet high, one about four feet. All flowered, but they are not likely to ripen seed. I dug up one plant, and potted it when in full bloom, placing it in a cold greenhouse to ripen seed, but it did not do so, but it lived and is still in the same pot. It is different in foliage and growth from any other I possess. The other two plants I left in the open ground; one, a *Sunflower*, has come up, and I enclose a blossom. It is about 7 feet high, growing very erect. It may be one of the three, but I cannot tell certain." With regard to the differences between *Harpalium* and *Helianthus*, Bentham and Hooker describe the former as having two paleaceous-axils dilated at the base, and sometimes left, but without any intermediate smaller scales noticed by Defontaines. In the flower of *Harpalium* sent by Mr. Bulliams there were the two opposite

lateral, and often cleft, very elongated scales; but these were connected with numerous shorter and pointed scales, all being coherent into a caducous ring. The receptacular scales terminate in a blunt end, which is coloured green. *Helianthus multiflorus* differs from *Harpalium* in having no intermediate scales. In this it agrees with the *H. annuus*, var. sent by Mr. Bulliams, while the receptacular scales have acute points, also green. In *Helianthus annuus* the receptacular scales are markedly different, being excessively elongated into awn-like terminations of a dark purple colour. With regard to the hybrids, they both agree in having lanceolate, sub-scabrid leaves, similar to those of *Harpalium*. The florets have the two longer scales, with a few short ones intervening, but not coherent. The receptacular scales terminate in acute not acuminate points, and are thus intermediate between *Harpalium* and *H. multiflorus*. Comparing these supposed hybrids with the hybrid "H. G. Moon" i.e., *Harpalium* (Miss Mellish) x *Helianthus multiflorus*, they entirely agreed with it, as also with a hybrid between *Harpalium* and *H. multiflorus* from a friend. It, therefore, Mr. Bulliams' be a cross between the annual and perennial varieties, then the latter is so strongly prepotent or "dominant" that no trace of its parentage is present.

Fruit and Vegetable Committee.

CHURCH, OCTOBER 1.—A meeting of this body was held here on the above date. Present: Messrs. W. Bates in the chair, G. Wythes, H. Balderson, W. Farr, S. Mortimer, J. Willard, H. Markham, G. Reynolds, J. Smith, G. Norman, and A. Dean.

A large collection of seedling and old Potatoes was seen, all of them late, and some exceptionally robust growers. Out of the entire number, thirteen were selected for cooking. Of these, General Buller (R. VITCH & SONS), a handsome, heavy-cropping, white round, General French (BAIN & SONS), large cropping, flattish, white round; and The Factor (DOBIE), a large cropper, were granted Awards of Merit. Some others were such fine croppers, and showed such high promise that, evidently not being sufficiently ripe now, it was resolved they should be cooked again two months hence, when *Celeriac* were under examination. These varieties were The Croiter, Cartinian, Fyde Wonder, Duchess of Inceholm, Ellington's Profit, Improved Kidney, and Kerr's 13. The cooking of the eleven varieties was admirable, and the committee gave it high praise. As there were eleven members present, the needful quorum was made.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 23.—The Floral Committee met for the first time at the Royal Aquarium on the above date under the presidency of Mr. J. Lyne, and though the subjects submitted were few, they were of an interesting character. First-class Certificates of Merit were awarded to the following new early-flowering varieties as decorative subjects:—

Golden's Pt..—A charming bright, soft yellow, Japanese bloom, with rather long drooping florets, growth dwarf and bushy, and free of bloom. From Mr. W. J. GORDLEY, nurseryman, Exmouth.

Harmony.—An early-flowering Japanese variety, dwarf, and free branching in habit; the ground colour brownish-buff, tinted with reddish-blue. From Mr. W. J. GORDLEY.

Mythell's Pearl.—An excellent addition to the Mythell group, and an early-flowering Japanese. The colour is delicate pink of a charming tint, the habit dwarf and free-flowering. From Mr. H. J. JONES, Ryecroft Nursery, Lewisham. All the foregoing are well adapted for garden decoration, in the border, and for cultivation in pots.

BRISTOL AND DISTRICT GARDENERS.

SEPTEMBER 26. At a meeting of this Association, held at St. John's Rooms, Mr. J. H. Vallance, of Redland, gave a paper entitled "Horticulture Commercially Considered." Speaking of fruit-growing, the lecturer said that excessive crops were most disastrous to the market grower, causing the markets to be glutted with undesirable fruit, the result being that very low prices were obtained.

The culture of flowers for cutting was one of the most profitable branches of horticulture, providing it was done on a large scale, so as to compete with foreign produce. Mr. Vallance also gave some very interesting information concerning fruit and flower culture in Jersey and Guernsey, giving particulars of the enormous output, and describing the mode of culture practised in these two islands.

The competitive exhibits proved to be the best the Society has had. The association is raising the local gardeners to take a deeper interest in their profession.

CHRYSANTHEMUM SHOW AT TAMWORTH.

SEPTEMBER 28.—The initial effort of those responsible for the creation of the above exhibition of early-flowering Chrysanthemums was highly successful. The show was held in the Town Hall, Tamworth, and there was a very interesting and thoroughly representative display of the early sorts.

There were twenty classes, and the competition was very spirited. The leading class, one for twenty-four bunches of any early-flowering Chrysanthemums, from plants grown in the open-air, and not disbudded, a superb display, comprising large bunches of flowers of good colour, and beautifully set out, secured leading honours for Mr. PRINCE of Loughborough. The best varieties in this collection were Lobbe Barnes, Mrs. J. R. Mollinson, Market White, Mychell White, Ivy Stark, Harvest Home, Crimson Marie Moore, Madame Casimir-Perier, Edith Stratt, Queen of the Earlies, and Golden Queen of the Earlies. Mr. J. Wood, Derby, was placed 2nd.

There was a keen competition for twelve bunches grown under similar conditions to that first named. Mr. PRINCE again leading with a capital lot of bunches; Mr. T. NADIN, Alverston, Derby, was a good 2nd.

A very narrow division separated the leaders in the class for six bunches Japanese distinct. Mr. PRINCE again led with large, handsome bunches, comprising Madame Desgranges, and Verano, Eugene Perez, Crimson Marie Masse, and Madame Casimir-Perier, 2nd, Mr. D. B. CRANE, Woodview Terrace, Highgate, London. The positions of these two exhibitors were the same in a class for six bunches of Pompons, distinct. There was very little to choose between their exhibits. Mr. PRINCE showing bright-coloured bunches of Marat Pilcher, Camart, Longfield, Flora, Little Fol, and Percy's seedling. In Mr. CRANE'S exhibit, Bronze Prince, Blushing Bride, and Little Bob (syn. scarlet gem) were very good.

Premier honours were secured by Mr. BRADSHAW, Hinckley, Warwick, for three bunches of Pompons, distinct, Fred Pelé, Flora, and Percy's Seedling being well shown.

There were several classes for a single bunch of a given colour. Mr. D. B. CRANE secured 1st prize for white with Mychell White; Mr. PRINCE with Crimson Marie Masse, for those of a crimson shade; this same grower winning 1st prize for the bronze or terra-cotta class with Henri Yon. Japanese of a rose or pink colour was won by Mr. CRANE, with Madame Casimir-Perier in good form; and Mr. PRINCE with Ralph Curtis, for those of any other colour.

The best yellow Pompon was Flora, exhibited by Mr. STANFORD, Tamworth; and the best white Pompon, Longfield, staged by Mr. PRINCE.

Decorative classes were well represented, a table decoration of Chrysanthemums, arranged with any kind of foliage and grasses, &c., for effect, being keenly contested. In this instance Mr. CRANE secured leading honours with a bright and charming table of yellow Chrysanthemums and coloured autumn and other foliage for effect.

MISS SYDENHAM was invincible with a beautiful hand-basket of Chrysanthemums, in which much taste was evinced; and the same lady well merited the 1st prize for a stand of Pompons, which was placed to her credit.

TRADE JUDGES were very fine. Mr. WILLIAM SYDENHAM filling up one end of the hall with a large group of the bunches of flowers, the majority of which were early-flowering Chrysanthemums. Pompons and Japanese sorts each contributed to the display, and together with the perennial Asters well merited the distinction of a Gold Medal awarded to this group.

Mr. H. J. JONES, Lewisham, had a number of novelties finely flowered and not disbudded (Silver Medal). Mr. WELLS, of Redhill, staged some beautiful representations of disbudded novelties, which were much admired (Silver Medal).

Mr. WALTER BENTLEY, Belgrave, Leicester, had some glorious Roses (Silver Medal).

Mr. WILLIAM SYDENHAM generously provided the funds and prizes, and there is good reason for believing the show will become an annual one.

LOUGHBOROUGH GARDENERS.

The annual meeting of members was held in the Co-operative Hall, Woodgate, Loughborough, recently. Mr. J. T. Smith presiding. Mr. D. Roberts presented the report and statement of accounts, the latter showing a satisfactory balance in hand. The report, which was adopted, showed that there was a membership of eighty, an increase of six on the year. The annual exhibition of hardy fruits and flowers was held in the Drill Hall, and was highly creditable. There had been seventeen meetings during the year, with an average attendance of twenty-seven members.

Competition amongst the members had been stimu-

lated by the President (Ald. W. C. Burder) offering a special prize Four essays were sent in upon the subject "How best to Furnish a Greenhouse with Flowers the whole Year." 1st, F. BRAYBORN, The Gardens, Southfield, 2nd, G. RAMBER, Pesswood. The annual exhibition of the association was attended by upwards of seventy. Alton Towers being visited. Ald. W. C. Burder was re-elected President, and Mr. Roberts again consented to act as hon. sec.; the other officers were all reappointed, the only alteration being on the committee, Mr. Cliff being appointed in place of Mr. J. Parsons.

Arrangements have been made to hold the meetings in the Committee-room, Town Hall.

Obituary.

ROBERT BOWIE.—We regret to announce the death of Robert Bowie, which occurred at Wooler on Sunday, Sept. 1, whilst saying grace at dinner. The deceased was born August 29, 1817, at Hophurn Hall, one of the home farms of the Earl of Tankerville, of which for several years his father was the manager, previous to going to Chillingham as bailiff.

He commenced his career as a gardener at Chillingham during the life of the present Earl's grandfather, and at the request of the then Earl Tankerville he removed to Walton-on-Thames, occupying the position of foreman, where he took every opportunity of improving himself in the profession he had taken up. On the death of the head gardener at Chillingham, Mr. Bowie was appointed in his place, fulfilling his duties with satisfaction to his employer and credit to himself for over 15 years. During this long term of service, many improvements were carried out by Mr. Bowie, in conjunction with the late Earl, not only in the gardens, but also in Chillingham Park and Hophurn Wood, which were planted by themselves being a hobby with both Mr. Bowie and the late Earl. Subsequently Mr. Bowie acted as bailiff, his son Thomas succeeding him as head gardener. Finally he retired in 1885, and removed to Wooler, where he continued to take an interest in gardening matters. When at Chillingham he was a successful exhibitor at Alnwick and other shows, and his services were greatly in demand at many of the horticultural and floral exhibitions in the north. The interment took place at Chillingham.

Mr. Bowie had been a subscriber to the Gardeners' Chronicle all his life, doubtless therefore since the founding of the Gard. Chron. in 1811, to which he occasionally contributed. He was much interested in the crossing and hybridizing of plants, and among others he raised Lobelia Little Gem, which was awarded a First-class Certificate by the R.H.S. The collection of Conifers formed at Chillingham Park during Bowie's career there was an extensive one, and many of the specimens, thanks to his fostering care, have grown to large dimensions. Those who may wish to have fuller particulars of Mr. Bowie's life, as here given, should turn to our issue for March 1, 1876, p. 300, where also a portrait is given.

MARKETS.

COVENT GARDEN, OCTOBER 3.

Table with 2 columns: CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES. and s.d. s.d. listing items like Asparagus Fern, Carnations, Cattleyas, etc.

PLANTS IN POTS—AVERAGE WHOLESALE PRICES.

Table with 2 columns: PLANTS IN POTS—AVERAGE WHOLESALE PRICES. and s.d. s.d. listing items like Adiantum, Arbutus, Aspidistra, etc.

FRUIT—AVERAGE WHOLESALE PRICES.

Table with 2 columns: FRUIT—AVERAGE WHOLESALE PRICES. and s.d. s.d. listing items like Apples, Bananas, Blackberries, etc.

VEGETABLES—AVERAGE WHOLESALE PRICES.

Table with 2 columns: VEGETABLES—AVERAGE WHOLESALE PRICES. and s.d. s.d. listing items like Artichokes, Beans, Beetroot, etc.

MARKS.—Now sold in Apples in barrels are now coming. Pomgranates, etc. are both for sale in boxes about 2 1/2 lbs. net wt. to 7 1/2 lbs. Large quantities of Runner Beans are being consigned to the severest, there being no buyers. Turnips are now of good quality, and cut flowers are abundant. English Apples of good size and quality are in short supply. Foreign Fruits letch per case, 1st and 2nd, Chatterbox, per case, 1lb.; and guinea, per box, 25 and 30.

POWERS.

Various sorts, 50s. to 7s. John Bath, 23 & 24, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES OF BRUSH CORN (per imperial qt.) for the week ending Sept. 25, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return.

Table with 5 columns: Description, 1900, 1901, Difference. listing items like Wheat, Barley, Oats.

ENQUIRY.

CALCEM CARBIDE.—Will some of our readers who may have had experience of the action of this substance on vegetation, kindly state if it is beneficial or otherwise.

ANSWERS TO CORRESPONDENTS.

ARIS NORBILIS: Correspondent. The blistering we take to be the result of insect-puncture. We do not see any of the "cherries" which is so injurious to these plants; but nevertheless we suspect they are the cause of the mischief. Look for little masses of white fluff, such as are found on old Apple-trees.

BLIGHT ON BEECH: W. X. Too common this season. The name of the creature is Adelges fagi. On young trees petroleum emulsion would do good; but generally the insect is so abundant that nothing can be done. The trees will be much weakened, and some will die.

BOOK: John Raisen, A Synopsis of the British Mosses, by C. P. Hobkirk, L. Reeve & Co., Henrietta Street, Covent Garden.

CARANTON: Constant Reader. Probably odorous.

CHRYSANTHEMUM LADY FITZWILLIAM: W. H. S. & Co. The discoloured Chrysanthemums are simply resenting the treatment they have only received. What the particular fault is can only be determined by the cultivator. Neither insects nor fungi have any share in causing the unhealthy appearance presented. G. M.

CORRECTION: ROYAL HORTICULTURAL SHOW REPORTERS' GARDENERS' CHRONICLE, SEPT. 28, p. 218. We inadvertently left out the initial letter "W." in the title of Messrs. W. Paul & Son, of Waltham Cross, and thus gave, erroneously, the credit of raising Rose Corallina to Messrs. Paul & Son, of the Old Nurseries, Cheshunt.

DISPILED JUDGING: B. We agree that the rules for judging issued by the R.H.S. greatly stand in need of revision, but so long as they are taken as embodiments of the law, you must submit.

DONATION: W. G. S. It will be given to the Royal Gardeners' Orphan Fund.

INSECT ON SEEBLING PANSIES: F. B. The grub or insect had escaped from the box. From your description of its proceedings among the Pansies, we should suppose it to be either a full-grown weevil (beetle), or a weevil-grub. Can you not send a few more of them? Weevils are difficult creatures to deal with when there are plants on the ground.

LABELLING: Rus-in-Urbe. We are unable to find traces of fungus or insect. We should be inclined to think the shrivelling is due to drought, or to excessive drainage.

LAUREL LEAVES HOLED: W. H. B. Catch your insect, and send it to us, and we will endeavour to get it named for you.

NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTE: We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such demands generally involve some inconvenience, and a large expenditure both of time and money on our part. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: A. Reynolds. The shoots are those of the Wild Crab, and the Pear is Bourne Clairgeau, — J. M., Blue Plum, Kirk's; Yellow Plum, Transparent Gage, Pear decayed, — N. G., 1, Leon Leclerc de Laval; 2, Bourne Hardy; 3, Court Pendu Plat; 4, Beauty of Kent; 5, Lane's Prince Albert; 6, unknown; — J. S., Barlow's, Pos-

sibly the Apple is a seedling, it has a close resemblance to Worcester Pearmain, but differs in some points. What is the habit of the tree?—*H. W.* The Pear was loosely packed, and arrived in a smashed state.—*Constant Reader.* Cardross Green.—*J. C.* Excellent specimens; 1, Harvey's Wiltshire Do-fiance; 2, Tower of Glamis; 3, Gloria Mundi; 1, Nelson Codlin.—*J. C.* 1, Pear Cassane; 2, Lane's Prince Albert; 3, Grenadier; 1, Calville Malingre; 5, Bramley's Seedling; 6, Tenchat's Egg.—*G. W. E.* Many thanks for the care taken in packing and labelling the fruit. 1, Lemon Pippin; 2, Golden Spire; 3, Duchess of Oldenburg; 4, Forge.—*H. F.* Your Apple is certainly not Cox's Orange Pippin. It has some resemblance to Crimson Quoining, but we are not quite satisfied. We will keep the fruit for further reference, and perhaps you can send a small twig bearing a few leaves.—*Lee.* 1, Winter Greening; 2, Alfriston; 3, Nanny; 1, Reinettes du Canada.—*J. W. M.* The Plum is Sandall's.—*A. S.* Poach Belle-Bance.—*C. F. L.* We cannot recognise the Pear in the condition it reached us. We must impress upon correspondents that they should avoid sending Pears in an over-ripe state, and also that careful packing is very needful.

NAMES OF PLANTS: *G. P.* 1, *Solidago multiradiata*; 2, *Aster acris*; 3, *A. cordifolius elegans*; 4, *A. Novi-belgii densus*; 5, *A. (Chrysocoma) linosyris*, popularly called Goldlocks, now included in *Aster*; 6, *Datura Stramonium*.—*F. D. & Co.* *Festuca rubra*.—*H. & Son.* *Panicum capillare*.—*Chas. Dennis.* *Odontoglossum Harryanum*.—*W. C. Bath.* 1, *Leucophytum Browni*; 2, *Gnaphalium leucopodium*, Edelweiss; 3, *Skimmia japonica*; 4, *Erigeron mmeronatus*; 5, *Abelia rupestris*.—*T. P.* 1, *Picea pungens* var. *glauca*; 2, *Abies hudsonica*; 3, *Crataegus*, not recognised; 4, *Pyrus Malus baccata*; 5, *Cotoneaster affinis*; 6, *Rhus Cotinus*.—*P. J. L.* 1, *Ulmus Rosseelsii*, a golden form of *U. campestris*; 2, *Juniperus sinensis*; 3, *Picea Morinda*; 4, *Thuja gigantea*; 5, *Thuja occidentalis*; 6, *Cupressus Lawsoniana*.—*R. L. P.* *Tetratheca verticillata*.—*J. C.* *Rosa microphylla*.—*J. C., Dilcot.* *Hellvella crispa*, edible (see fig. 80).—*B. B., Kensworth.* *Oncidium incurvum*.—*Essex.* 1, *Mesembryanthemum tenuifolium*; 2, *Coprosma Bancraria variegata*; 3, *Hieracium Aurantiacum*; 1, *Gnaphalium margaritaceum*; 5, *Geranium sanguineum*; 6, *Statice Armeria*; 7, *Clerodendron fallax*.—*E. C.* *Oncidium ornithorhynchum*.—*W. E.* *Medicago Echinus*.—*Hunt.* *Acer campestre*.—*May L.* Very closely allied to the common *Hyssop*, *Hyssopus officinalis*, but larger in all parts. Further investigations are in progress.

NARCISUS BULBS INJURED: *N. Y. Z.* The bulbs are attacked by a fungus, *Botrytis vulgaris*, and after the scales are somewhat weakened by this parasite, the Eucharis-mite follows and adds to the injury. The mite simply swarms in most of the bulbs examined. If it were possible to dry the bulbs quickly after lifting they would remain sound; it is during the slow process of drying that especially favours the growth of the fungus, which prepares the way for the mite. Mix kaint or sulphur with the soil when planting. *G. M.*

ORCHID SPOT: *H. W., Lancashire, and Belgium.* The spotting of the leaves has till recently been mysterious. Lately, however, a fungus, *Gleosporium*, has been detected, and this, if confirmed, is amply sufficient to account for the trouble; see Report of the Scientific Committee in our present issue. The disease seems to be spreading rapidly, but beyond disfigurement it does not seem to do much harm. If, in fact, however, weaken the plant. We should advise you to burn the affected leaves and to spray the plants with a weak solution of sulphide of potassium, 1 oz. to the gallon—proceeding tentatively, and with caution.

PEAR CRACKING: *S.* Due to a fungus, *Fusicladium dendriticum*. Yes, the advice given to *H. B.* on p. 236 is applicable in your case.

PLANTING UNDER TREES: *J. H. B.* The larger and smaller Periwinkle, Ivy, Batcher's Broom, St. John's Wort, common Box, and common Laurel and Portugal Laurel where the shade is not too dense.

REMEDY FOR CHRYSANTHEMUM: *Inquisitor.* Being sure of its efficacy, manufacture it in quantity, and advertise its sale in the gardening journals.

SUBSTITUTE FOR THE TURFING-SPADE: *J. H. W.* We know of none.

TEA ROSE: *Rose.* We cannot undertake to name varieties of the Rose. Send to some Rose-grower in a large way of business.

evil of a too rich soil would be increased by the frames being placed in a damp, shady position. A better position for them would be out in the open, away from walls or buildings, unless it be a wall on the north side; and the beds should be raised a foot at the least above the level of the ground, and be put on a solid basis, with good drainage below the bed of soil. As a compost in which to grow the Violets, eschew manure in favour of leaf-mould or greatly spent hot-bed manure, finely screened, and intimately mixed with fresh loam—that is, loam that has been in stack for a year or longer. You have made matters worse for the plants by applying Thomson's Plant Manure to a soil already too rich in manure. We note that your plants have not been closely denuded of runners during the summer.

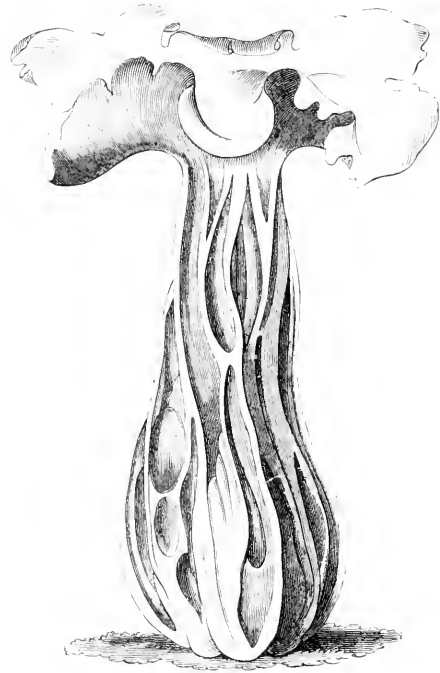


FIG. 80.—HELVELLA CRISPA.

THE PREVENTION OF AN ATTACK OF THE ONION-FLY (ANTHOMYIA CEPARUM): *Scol.* Mix 1 quart of petroleum with 1 bushel of wood-ashes or sand, and scatter this between the rows of plants. Keep the soil slightly drawn up to the plants at the season when the female is on the wing, so as to prevent her from laying eggs near the bottom.

TREE-FERNS: *A. A.* If the stems are newly imported, stand them upright in pots, large enough to accommodate the butt ends, filling in around them with loam and peat in roughish lumps, sand, corks, or sandstone, and make the mass somewhat solid; having done that, place them in an intermediate-house, or other glasshouse having a night temperature not lower than 48°, nor higher than 70°, and keep the stems wet by syringing them twice a day.

VIOLETS NOT SUCCEEDING: *J. C.* Our opinion is that the soil contains too much strong manure, which the extreme vigour of the plants and the sample of soil indicate. The

WAGES DUE: *N. B.* We can give you little hope of getting anything out of the bankrupt's estate. You might take the case to the County Court, the procedure costs there being reasonable in amount.

WALNUT-LEAVES WITH ECRESCENTES: *Z.* Caused by a mite, *Phyllerens Juglandis*.

COMPOSITIONS RECEIVED.—*Mark Webster.*—John Bowie L. C.—E. S., with thanks—Ladams, with thanks—F. E. L., next week—W. E., with thanks—Sir G. K. J. C.—C. H. G.—E. H. J., many thanks—F. L. C., we will make enquiries—J. M., please send specimen—A. W. P.—W. J. B., many thanks—F. G., many thanks—A. D. C.—Belgium—H. W.—F. W.—W. H.—R. M.—H. M.—A. K.—W. W.—A. H.—Wild Rose—E. S.—E. H. J.—J. R. J.—E. W.—A. D.—J. O'B.—Dr. BOUVIA—E. C.—A. J. L.—A. J.—W. E. B., Grenada—E. M.—W. B.—H. B.—W. J. S.—Gertrude Cope—Duckson & Co., Edinburgh—J. P.—T. M.—A. R.—J. W. T. W. R.—H. V. W.—Harwood Bros.—H. H. K.—W. R. Ramsbeck—A. A. J. H. L.—R. I. H.—C. S.—W. B. J.—G. B. G. M. C.—W. R.—T. M.—A. Hillman.

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



ASBARTH
Photo

KNOX
KNOX

OSTIAIA SUTCLIFFIA, IN THE NURSERY OF MESSRS. JAMES VEITCH & SONS, GARDENERS.



THE Gardeners' Chronicle

No. 772.—SATURDAY, OCT. 12, 1901.

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LISMORE CASTLE.

LISMORE CASTLE, the seat of the Duke of Devonshire, occupies a commanding position on the summit of a steep cliff, close to the river Blackwater (which is also called the Rhine of Ireland), and is 40 miles W.S.W. from Waterford. It was erected by King John in 1185, and was the residence of the bi-shops until the sixteenth century. Here Henry II. received the allegiance of the bi-shops and archbi-shops after landing at Waterford; it has passed through various sieges, and was partly destroyed by fire in 1645. In 1518 the manor was granted to Sir Walter Raleigh (whose ancient residence, "Myrtle Grove," is still to be seen at Youghal, about 11 miles from here); from him it passed to Richard Boyle, afterwards made Earl of Cork, and descended by marriage to the Dukes of Devonshire. The Castle is covered in places by Ivy, Ampelopsis hederacea and A. Veitchi, Roses, Wistaria, and some choicer plants have been added of late years to give variety, but are

yet in a small state. As the building extends around the four sides of a courtyard, the walls amount to a large space, and look remarkably pretty with their drapery of green; owing to the accompanying photograph being taken from the bridge, the bank next the river is much steeper than it appears to be, but some winding walks traverse it in various directions. Being partly shaded by forest trees, a large number of Ferns find a congenial home in this moist climate, and add grace and variety to the vegetation. The wall by the roadside leading to Cappoquin are full of Asplenium trichomanes, Ceterach officinarum, Blechnum spicant, Asplenium ruta muraria, &c., wherever they are shaded by trees; Viburnum lantana was growing in quantity close to the Castle, and had the heaviest crop of berries I have ever seen.

The flower garden is not very large, but contained some fine beds of seedling Begonias, which were in full beauty at the time of my visit. Calceolaria amplexicaulis was carrying an unusual amount of bloom, and showed to advantage in a scroll-shaped bed, with variegated Pelargonium and blue Lobelia. A walk over-arched by some old Yew-trees is interesting from the numerous specimens of inter-grafting where the side branches have crossed each other, many years ago. From the regular way in which this has occurred, I think the trees have been as-sisted considerably in their endeavours to support each other. Close by, I was shown a large quantity of Selaginella denticulata, which had established itself among the grass on the lawn, and has now been there for many years; in some places it was as plentiful as the grass.

The kitchen-garden is traversed by grass walks, with herbaceous borders on each side of them, which give it a very pretty appearance, and add much to the beauty of a department which is too often somewhat uninteresting. Tigridia pavonia was growing here in large patches 2 feet high, and full of its richly-coloured flowers, forming a sight not easily forgotten; various species of Helianthus, Anemone japonica, in variety; Asters, Tropaeolums, and other plants were in flower. A nice piece of Tropaeolum speciosum was growing on an east wall, but not looking so happy as it does near Oban. In a sheltered position near the fence surround- ing the tennis-ground, Diplacus glutinosa was flowering well, and had survived the previous winter in that position.

Apples were not heavily cropped, but Ribston Pippin, Lady Sudeley, King of Pippins, and some others were carrying some fine fruits. Pears were cropping well. A wall of Peaches, about 60 feet long, had the finest crop of fruit I have ever seen except in Kent. The varieties consisted chiefly of Royal George, Noblesse, Barrington, and Wallborton Admirable, the whole length was thickly covered with fruit; a fixed glass coping projected about 2 ft. from the wall, no other protection is given, and the coping is never removed. Mr. Aherne may well be proud of his Peach-wall, such crops are seldom seen in the open air. Another wall of a similar size, and also fitted with a coping, had two fine healthy Apricot trees which bear well, also more Peaches and Nectarines. The glass-houses call for no special notice, and are somewhat out of date, but this is being remedied.

The whole country around here is very pretty, but in order to see it to the best advantage, the writer was kindly conducted to the top of the flag-tower, where the view is simply magnificent. The river Blackwater is seen several hundred feet below, winding along a green valley, which, in some places, widens considerably, and is well furnished with trees; away to the north the Knock-meadow mountains tower up 2,000 ft. into the sky, with various hills and mountains in other directions; and only a short distance from the mansion the spire of the Cathedral peeping up among a dense mass of foliage, appeals to all by its very slender proportions and rich ornamentation. W. H. Divers, Belleisle Castle, Gallops, Grantham.

CULTURE OF THE QUEEN PINEAPPLE.

SEE SUPPLEMENTARY ILLUSTRATION.

DURING recent years the Pineapple has to a considerable degree lost the high position that it formerly held amongst British-grown fruits; this has resulted from a combination of circumstances, but chiefly probably through the importation of fruits from abroad having brought it within reach of the masses, and thus made it comparatively common. These foreign fruits, however, cannot be compared with a good, well-developed Queen of home growth from the point of flavour and colour; and I will, at the request of the Editor, endeavour to give a few brief remarks upon the culture of this variety, that produces such fruits as those that are figured in this issue of the *Gardeners' Chronicle*.

Here the structures, four in number, devoted to the Pineapple, are small, each only suitable to accommodate thirty fruiting plants, placed 2 feet asunder. They are low, and hip-roofed, so that the plants are situated near the glass, and thus have the benefit of plenty of light. The houses are adequately provided with hot-water pipes to maintain up to the desired temperature both the atmosphere and the plunging material, which consists of decayed tree-leaves; and they are well sheltered, a combination of conditions well suited to Pineapple-culture. The soil that is used is a light turfy-loam, cut in thin turves, and stacked for about six months before it is used, and preserved in a moderately dry condition. For potting purposes, the turves are freed from the finer particles of soil, roughly torn apart, and mixed with a 7-inch potful of dry soil and bone-meal, to an ordinary wheelbarrow full of soil. Thus a compost is formed that can be thoroughly made firm with a rammer, and yet remain porous if plenty of drainage materials are used. The Pine, as may be perceived from the texture of its leaves, and gathered from the conditions under which it luxuriates in its native habitat, is readily injured by excessive moisture, and much care must be taken to meet the needs of the plants under cultivation in this respect at all stages. In the case of newly-potted suckers, or plants, until the soil has become well ramified with roots, only small quantities of water should be afforded, as an excessive supply at such times, and also during the winter, soon ruins the health of the plants. Throughout the growing season, however, and whilst the fruit is swelling, water may be more liberally afforded, and also aids to growth in the form of moderately weak liquid-manures, as that made from sheep's droppings, or by mixing water with Peruvian Guano each time the plants need water.

We usually have strong, clean suckers in a state fit to pot early in September, which we

prepare in the ordinary manner, pot them firmly into well-drained 7-inch pots, and plunge these to their rim in a bed having a temperature of 80 to 85°, the atmospheric temperature being allowed to fluctuate according to external condition from 70° at night to 85° by day; the usual treatment with respect to shading, ventilation, and maintaining atmospheric moisture receiving careful attention. When the plants are well rooted, and as the days are shortening, the temperatures are gradually lowered, until by the middle of November that of the air ranges between 55° and 60°, and the bottom-heat 75° to 80°, which warmth is maintained till the middle of the month of February. Early in March the plants are shifted into fruiting pots of 11-inch and 12-inch diameter, the balls of soil at the time being in a moderately moist state, and filled with active roots. In potting, the soil is made perfectly firm by being rammed around the ball, and the pots are plunged at 2 feet apart in beds which have been replenished with fresh material, where they remain undisturbed until the fruits ripen, and suckers have been taken. I have a great dislike to replunge fruiting plants just previous to starting them for fruiting, as is the customary practice, or indeed at any other time, for it cannot be done without more or less injury to the plants, while it is an unnecessary proceeding unless it be for the purpose of retarding a portion of the stock of plants in a cooler house.

No material difference is made in the treatment of what is termed successional plants to that generally practised; every encouragement is afforded, however, by closely attending to routine work to induce a steady growth.

In order to secure ripe fruits in June, a house is started early in the month of January by raising the temperatures and increasing the humidity. While the fruits are in flower, a comparative dryness is maintained in the house, so that the fertilisation may be certain; and subsequently, during the swelling period, pains are taken by early closing and applying manure-water to develop the fruit, and as a means of enhancing the flavour, the ventilation is increased, no more water at the root is applied, and the humidity of the air is reduced as soon as colouring commences. *Thomas Coomber, The Hendre, Monmouth.*

NEW OR NOTEWORTHY PLANTS.

COTYLEDON NANA, N. E. Brown.

A VERY dwarf plant, densely and much branched close to the ground, forming a tuft about 1 to 1½ inch in height, excluding the inflorescence, glabrous in all parts. Leaves alternate, crowded on the very short branches, erect or ascending, 3 to 7 lines long, and about the same in breadth, broadly cuneate-obovate, very obtuse, fleshy, 1½ to 2½ lines thick, nearly flat or slightly convex above, convex beneath, light green, not glaucous. Peduncle terminal, erect, shortly exceeding the leaves, ½ inch long, one-flowered, slender, thickened under the calyx, brownish, bearing two or three minute bracts on the lower part. Flower erect. Calyx short, with five narrowly deltoid, erect, acute teeth ½ line long. Corolla-tube 7 lines long, 1½ line in diameter, slightly clavate, somewhat 5-angled, reddish-brown, with five greenish angles; corolla-lobes spreading and more or less recurved, 1 line long, ½ line broad, ovate, acute, rosy-purple, with whitish margins, and with the mouth of the tube at the sinuses somewhat membranous and whitish. Stamens included; anthers ochreous-yellow.

The above description is made from a plant that was sent in 1899 by Prof. MacOwan from South Africa to Kew, where it has recently flowered. Specifically it is nearly related to *C. hemisphaerica*, L., but the leaves are smaller, without the slightest trace of an apiculus at their apex, such as is always found in *C. hemisphaerica*, and they are of a much lighter, somewhat yellowish-green, not greyish-green. The one-flowered peduncle may not be a constant character, as the other species of the group have a spicate inflorescence.

STAPELIA MACULOSIDES, N. E. Brown.

Stems erect, about 3 ins. high and 4 to 5 lin. thick, obtusely 4-angled, with very slightly concave sides, glabrous, angles very shortly toothed, the teeth tipped with a rudimentary, deltoid, acute, ciliate leaf ½ to ¾ lin. long. Pedicels 1½ to 1¾ lin. long, 1½ lin. thick, glabrous to the eye, but with an exceedingly minute and very scattered pubescence—as seen under a strong lens. Sepals 2½ lin. long, 1 lin. broad, ovate-lanceolate, acuminate, glabrous. Corolla about 2½ inches in diameter, nearly flat in the only flower seen, 5-lobed to two-thirds the way down, glabrous on the back; disc flat, without a distinct raised annulus around the shallow (½ in. deep) central depression, dark violet-purple, marked with concentric, irregular paler lines and spots, and thinly covered with short purple hairs; lobes 12 to 13 lin. long, 8 to 9 lin. broad, oblong-ovate, acute, slightly rugose, marked with dark violet-purple transverse lines and spots on a light yellowish ground on the central part, and with dark violet-purple margins and tips, ciliate with dark purple simple hairs ½ to 2 lin. long, otherwise glabrous. Outer coronal lobes 2½ lin. long, 1 to 1½ lin. broad, linear, acute, channelled down the face, blackish-purple, or blackish with a faintly paler spot near the apex, glabrous. Inner coronal-lobes 2-horned, blackish, faintly speckled with paler dots at the apex of the inner horn, glabrous; outer horn 1 to 1½ lin. long, somewhat spreading, laterally flattened, narrowly attenuate-deltoid, acute; inner horn about 3 lin. long, subulate, strongly recurved just above the base, neither thickened nor acute at the apex.

For a specimen of this interesting novelty I am indebted to Mr. Justus Cordery, of Bidcot, with whom it flowered in August of this year. At first sight, the flower of this species is so much like that of *S. maculosa* that it might easily be mistaken for it; but there is no raised annulus on the disc, and the coronal-lobes and stems are quite different. *N. E. Brown.*

ORCHID NOTES AND CLEANINGS.

LELIO-CATTLEYA × ADMIRAL DEWEY.

A NOBLE four-flowered inflorescence, a fragrant and showy bouquet in itself, is kindly sent by George Singer, Esq., Coundon Court, Coventry (gr., Mr. Collier, who remarks:—"I think you will say that it is a very fine specimen of this showy hybrid between *Cattleya Warneri* and *Lelio-Cattleya elegans*. Each flower is 8 inches across; the sepals and petals white, beautifully tinged and veined with light rose-purple. The lip, which is very suggestive of the handsome *Cattleya labiata Warneri*, is white, slightly tinged with rose at the base; the finely crimped front lobe being of various shades of bright purple, the colour extending in a band to the base. The central area has on each side a bright yellow patch. When grown as Mr. Collier has grown this specimen, it is one of the very best hybrids.

Examination of its features, however, seems to indicate that a mistake has been

made in recording one of the parents, viz., *L.C. × elegans*, and that *L.C. × Schilleriana* (nat. hyb. *L. purpurata × C. intermedia*) which goes in most gardens as *L.C. × elegans*, was the agent used. Wherever *L.C. × elegans* (nat. hyb. *L. purpurata × C. Leopoldii*) is used, the thick substance, and the livid purplish and greenish hue of these sepals and petals invariably appear in some degree in the progeny. *L.C. × Admiral Dewey*, however, has the thin substance and clear white ground colour which might be expected from *L.C. × Schilleriana*, and its floral beauty has been enhanced considerably by the influence of *C. labiata Warneri*, which is still the finest and richest in colour of its class. *L.C. × Admiral Dewey* was shown by Messrs. Charlesworth, of Bradford, at the Temple Show, May 25, 1898.

CATTLEYA A. DE MEULENÈRE.

A variety of *C. Trianae*, remarkable in the circumstance that the broad petals are tipped with rosy-purple like the fore part of the lip. It forms part of the collection of the Marquis de Wavrin, which is the subject of an appreciative note in the current number of the *Revue de l'Horticulture Belge*.

PEONIA ARBOREA.

ALTHOUGH we always think and speak of Japan as a small country, nevertheless it took sixteen hours of continuous travel in a fast train to go from Yokohama to Osaka, that great commercial city, the Manchester or Liverpool of Japan. Leaving at 6.30 A.M. on May 2, we reached Osaka at 10 P.M., after a trying trip, for although only the beginning of May the heat was intense; added to the heat was the dirt, for the Imperial Japanese railways use a very soft coal, producing such an amount of dirt that at my journey's end I was just about the colour of my adopted countrymen. Although I had started with the firm intention to stick by my two Japanese business friends during our trip, yet tired and stiff as I was, I sighed for something more restful to my 6 feet than a "futon" and the Japanese matting ("Japanese bed").

But after a night's rest in the Osaka Club Hotel, I was ready for another start—for it takes time and patience to attain any end in this country. Starting again at 9.30 A.M. from the principal Osaka station, changing at a small suburban station, Kanzaki, for "Ikeda," famous perhaps first for its sake (Japanese Rice wine), and secondly for its Peonies. At all stations through which we had passed were large posters—no doubt but that the Japanese are progressive—which, translated by my friends, proved to be invitations from the different growers to inspect their gardens.

At 10.20 we reached Ikeda, but there was still a long jinriksha ride through the usual endless Japanese villages, all, by the way, duly decorated with the flag of the "Rising Sun" in honour of the birth of the Imperial grandson. At last, in a village named Kinobe, we had our first glimpse of the Peonies. There the owner of the garden was busy tying up large bunches to send to Osaka. The Japanese are great admirers of these flowers. At this I began to think I would find nothing but empty fields, but contrary to Japanese methods, I soon saw flowers enough to make thousands more of such bunches. I mention this fact particularly, for Japan is unlike other countries, and the moment one wishes large quantities of a given article, the price rises very perceptibly, for the reason that the demand is so much larger than the production, that it is simply impossible to fulfil the order. So for once I was pleasantly

surprised, as I saw what even Europeans would call a large stock.

But the largest and best fields were still a little further on. To these fields we took a photographer, and your readers will see from the accompanying photograph (Fig. 81) that such beauty deserved to be preserved. The Japanese call it "The Flower of Prosperity," and I know of no other blossom which so gives the idea of wealth and luxury, as these enormous, sweet-scented, wonderful flowers, ranging in colour from blackest-purple, through scarlets, reds, cerises, pinks to white.

These fields as regards varieties and culture seemed the best I have seen, and I am pleased

Bamboo tube, filled with clay, is put around the stem. When they begin to grow in February or March, a little manure is applied—here in Japan they use dissolved Rapeseed cake. In very dry weather they irrigate between the rows, but nothing more is done except to keep them clean from weeds, and preserve the suckers which sprout from the roots.

After flowering, the blossoms are cut, for they are not allowed to go to seed. A liberal supply of the Rapeseed manure is then given, in order to get strong flowering eyes. The upper part of the shrub is used again for grafting, and the plant is set with three or

FRUIT REGISTER.

PEAR MADAME DE MADRE.

The *Bulletin d'Agriculture, de Floriculture et de Culture Potagère*, for August, contains a coloured plate and description, by M. Em. Rodigas, of Pear Madame de Madre, raised by the Antwerp pomologist, M. C. Darras de Nalhin, in 1881, from Dolices d'Hainaut. The variety is thus described in the *Bulletin de la Société Pomologique de France*, 1885:—"Fruit of medium size, pyriform, rather elongated, contracted at the lower end, terminating in an oblique cone at the base, com-



FIG. 81. A FIELD OF BLOSSOMING TREES IN JAPAN. (SEE P. 270.)

to say that after a dinner with the owner, whose wife kept the little cups well filled with saké, we concluded a contract for the entire stock.

On our way back we drove through a beautiful district, planted with Orange-grasses—small trees, only about 4 or 5 feet high, so that they can be easily cared for, and protected in winter from the dangerous cold dews, but looking fine, and free from insects or disease.

The soil in that district is a very sandy clay, and the plants are cultivated in rows, somewhat in the way we cultivate Potatoes. They are, of course, all grafted upon the single-purple wild variety, this being done in September and October. In order to protect the graft from winds and from breaking, also that they may grow more quickly together, a

four good flowering buds. It is strange that one sees so few old plants, and these not good, for each year the fine varieties are sold out.

However, in Kioto, the western capital, where we visited an exhibition of Peonies and Azaleas, I found a number of old plants. Although they had not had the very best of care and culture, yet some of them flowered magnificently.

This exhibition was held in a Japanese restaurant, better known in Europe as a "Tea house," and although raining, there were a number of merry-makers, enjoying the flowers and listening to several Geisha girls, who played the samisen (to our ears a horrible-sounding instrument), and whose songs probably had as a theme the beauty of the blossoms. A. Langer (L. Borchman & Co.), Yokohama.

pressed on two sides at the narrow end, rounded in the upper end. Skin citron-yellow, lightly speckled with rust-red. Peduncle rather slender, elongated, placed obliquely. Eye of medium size, firm, irregular, sunk in a normal depression. Flesh (on October 19) amber-white, very delicate, melting, very juicy, sweet, with a pleasant perfume, nutty, and rather spicy, very good."

M. Fr. Burvenich, pere, reports: "Epicarp satiny, pale yellow, self coloured, marked with small inconspicuous dots. Flesh delicate, transparent, very juicy, and with a distinctive delicate and pleasant perfume, difficult to define; flavour of honey and Pineapple. Fruit of the highest quality."

The tree is fairly fertile; weak on the Quince, and strong on the free stock. The fruit hangs but lightly on the tree, and falls in a high wind.

The raiser considers this variety one of the best Pears known. M. de Naghin also says that the fruit ripens from the exterior, and does not "blet." Madame de Madre Pear obtained the 2nd prize at the Antwerp Exhibition in 1885 for the best Pears obtained by the growers from seed subsequent to 1875.

SHAPE OF PEARS AFFECTED BY CLIMATE.

The shape of Pears of the same variety varies, not only as the fruits are affected by climatic influence and cultural conditions, but differs also in specimens growing on the same tree.

Herr Yanczewski in his "Dimorphism of Pears" (reviewed in the *Botanisches Centralblatt*, No. 38, 1901, by Herr Rother, of Charkow), discusses the cause of these variations, and attributes it to the position of the fruit in the inflorescence. Pear blossoms are grouped in umbels, and the terminal flower is the last to open. Terminal fruits come to perfection far less often than lateral fruits, and, at most, make but a small percentage of the crop. It is quite exceptional for them, as in *Beurré Diel*, to make 45 per cent. of this.

In consequence of the later opening of the terminal buds, the terminal fruits are later than the lateral fruits, and are generally ready for gathering some ten days or a fortnight later. The stems of the lateral fruits are thickened at the base, and they break off easily from the axis of the inflorescence, but the stems of the terminal fruits are on the direct line of the axis of the inflorescence, are shorter, have not the above-mentioned thickening, and, when ripe, are only broken off with a certain exertion of force. The difference in shape is not noticeable in all sorts of Pears, not, for instance, in those with long, and narrow, or very short fruits.

The variation in general consists in the terminal Pears being narrower and, for the most part, longer than the lateral fruits; they are, further, less blunted at the base, and set less closely to the stalk. The average weight of the terminal fruits is, with nearly all sorts, considerably less, than that of the laterally-placed Pears.

Herr Yanczewski's notes are illustrated with clear illustrations from photographs of typical terminal and lateral fruits of the following Pears:—*Passé Colmar*, *Boycenné d'Hiver*, de *Cursé*, *Fruite*, *Soldat Laboureur*, *Beurré Blanc*, *Seigneur d'Espéren*, and *Beurré Henri Courcelle*.

NEW FRUITS.

Among new fruits to be sent out by Messrs. G. BUNYARD & Co. this autumn are *Michaelmas Nellis Pear* (fig. 82); *Beurré Perdu*, *Bergamotte Renée*, *Belle Gourdaine*, *Belle des Arbres*; *Directeur Hardy Parrot*, *Bergamot*, *President Barab*, *Virginouse Pears*; *May Duke Gooseberry*, a great gain as an early sort; *Mrs. Phillimore*, *Early Victoria*, *Ben's Red*, *Apples*; and *Superlative Raspberry*.

NEW PEAR, MICHAELMAS NELLIS.

The Pear of which we give an illustration, p. 273, is offered as a novelty by Messrs. Geo. Bunyard & Co., of Maidstone. It is a Pear of medium size, regularly top shaped, with a smooth greenish-olive skin, speckled with russet near the top. The eye is open, scarcely at all depressed; the stalk is very slender, $1\frac{1}{2}$ to 2 inches long, set in a shallow depression. The flesh is white, with very little grit, melting, juicy, and of delicious flavour. It is ripe at the end of September or beginning of October.

THE RASPBERRY-BLACKBERRY HYBRID.

Messrs. James Veitch & Sons, Ltd., Royal Exotic Nursery, 544, King's Road, Chelsea, will have for delivery in autumn, 1901, the new Raspberry-Blackberry, "The Mahdi," raised by them. This sterling novelty, the result of a cross between Raspberry *Belle de Fontenay* and the common Blackberry, is of considerable interest, and a valuable addition to the list of hardy fruits. In habit and foliage it somewhat resembles the Blackberry, the influence of the male parent being marked in the colour, size, and flavour of the fruits. Ripening the latter part of July and during the first fortnight in August, it fills a gap between the season of the summer Raspberries and Blackberries, and should prove useful to those who wish to maintain a supply of soft fruits. The flavour is excellent—superior to that of the Loganberry, for which the same parentage has been claimed. It received an Award of Merit from the Royal Horticultural Society, and is described as follows in the official report of the Society, published in the *Journal of the Royal Horticultural Society*, vol. xxiii., p. exi: "In appearance it is like a very large red-violet Blackberry, and the foliage is almost exactly midway between the two parents. The plant is a great bearer, and ripening after Raspberries and before Blackberries should prove an acquisition."

A NEW GRAPE.

Messrs. Jas. Veitch also send out the Grape "The Prince of Wales," which is a sport from *Mrs. Pince*, but possesses a finer bunch and larger berry. It is of good constitution, excellent flavour, and sets freely. It was exhibited at the Royal Horticultural Society's meeting at the Drill Hall, September 25, 1900, and was recommended an Award of Merit by the Fruit Committee.

The following extract is from the official report of the Royal Horticultural Society, as published in the *Journal of the Royal Horticultural Society*, vol. xxv., p. lx:—"An Award of Merit was recommended to Grape *Prince of Wales*, from Messrs. James Veitch & Sons, Chelsea. A sport from *Mrs. Pince*; berries large, oval, blue-black, and of very good and slightly Muscat flavour; bunches large, long, and tapering, and said to keep plump until May."

NEW PEACHES.

Messrs. Thomas Rivers & Son, of the nurseries, Sawbridgeworth, Hertfordshire, the place of origin of many of our finest Peaches, Nectarines, Pears, and Plums, and which lengthen the season during which we may enjoy them by several weeks at the beginning and the end, are sending out two new seedling Peaches, viz.—

Duchess of Cornwall.—Medium size, freestone. Skin creamy-yellow, with a red striped cheek. Melting and delicious, with a distinct Nectarine flavour. Grows well and bears freely; valuable for cold house or forcing. The name of this Peach has been changed, as an Award of Merit was already given to a different Peach, shown by Mr. Divers, under the name of *Duchess of York*. (A. M., June 4, 1901.)

Thomas Rivers.—A large round Peach, with a bright red cheek, ripening in the end of September. Flesh firm, juicy, and of good flavour; a remarkably heavy fruit; freestone. Forces well, and with heat attains great size and very deep colour. (F. C., June 28, 1898.)

—Fruits naturally occupy much of our space this week. It is appropriate, therefore, to call attention to a new Peach which has

been named to honour the memory of Edward Pynaert, who, to his many other attributes, added that of a pomological expert. Pynaert led so active, so useful, so beneficent a life, that he was admired and beloved by all who knew him. No Peach or other memorial is needed to quicken our memories of so thorough a man, so staunch a friend, so devoted a horticulturist. But the generations pass, and a new set of workers arise. It is fitting therefore that the memory of Pynaert should be handed down to those who can never experience the magnetism of his personality as we who worked with him were privileged to do. It is fitting that the tribute should be paid by his old colleague *Burvenich*, in whose nurseries the new Peach was raised, and it is appropriate that its history should be written by the sympathetic hand of his fellow editor, *Count de Kerchove de Denterghem*.

While Pynaert was lying on his death-bed, his old friend and colleague, *Burvenich*, sent him specimens of this Peach, with a letter which circumstances have rendered specially touching. "There is," said *Burvenich*, "a beautiful and delicious Peach named in compliment to Madame Pynaert. Now I have found among my seedlings another Peach worthy, in my opinion, to rank with 'Madame Pynaert.' I propose to call it Professor Pynaert. You will thus be represented, your wife and yourself, in the garden and on the espalier. Symbolised as Peaches you will rival one another in aroma and flavour, as you rival one another in personal qualities, in worth, and cordiality." Pynaert was still able to express critical appreciation of the merits of the fruit, and returned a brief letter of acknowledgment; but in the course of a few days the Peach became what it now is, "*Souvenir d'Edouard Pynaert*."

It is a seedling from early *Grosse Mignonne*, fertilised, as is supposed, by the pollen of *Cardinal*. It is very productive, ripens in July and August, and has a delicate, juicy, white flesh, speckled with rose, and of a quality worthy of its name. A coloured figure and full description are given in the *Bulletin d'Arboriculture*, &c., for September last.

PLANT NOTES.

A DWARF FORM OF SPARMANNIA AFRICANA.

WE read in the *Gartenwelt* of the appearance in commerce of a dwarf form of this pretty greenhouse and room plant from the Cape of Good Hope, which flowers one year from the cutting. It is a very desirable thing to have a dwarf form of compact habit of growth, for the type is a straggling grower very apt to get bare below, and to reach to too great a height for the windows of rooms or small greenhouse. Some enthusiastic cultivators have been working with cuttings of flowering shoots in the hope of obtaining a dwarf habit and more abundant flowers, and these endeavours have resulted in a dwarf form, which has remained constant for several years.

COSMOS DIVERSIFOLIUS ATROSANGUINEUS.

For those who like flowers of the richest crimson or maroon, this plant will not be unwelcome. It grows about 2 feet high; the flowers are borne on long stalks above the bush-like growth, and so display their colour with full effect. The plant forms in the border pretty groups, where early-flowering bulbs have stood. The slender stemmed flowers are useful when cut.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

A TROUBLESOME pest at times is green-fly amongst the petals of the expanding blossoms, and no time should be lost in ridding the plants of them before the flowers begin to expand, for it is scarcely possible to clear them out of opening blooms. As soon as the plants are housed, whether there are aphides visible or not, the plants should be afforded a vapourisation or fumigation on two or three successive nights; and in the case of plants having blooms with unfolding petals, the smoke or fumes will not harm them providing proper care is taken. After applying the

for this purpose than a pair of tweezers. The least shake of the plant, and they secrete themselves among the petals, and are then not easy to dislodge. Woodlice in some places are likewise troublesome, eating the florets on the under side of the flower. In the case of plants standing in vineries and Peach-houses, where the borders are mulched with manure, the mulch, which is now dry, forms a famous harbour for woodlice. Hand-picking from the flowers, as well as trapping them on the border, should be closely attended to. Sometimes many good flowers are spoiled before the damage is observed. Slugs, too, disfigure the flowers by crawling over them, and in some cases eating the florets. Where any trace is seen of them during the daytime, they are almost sure

from damp, more especially if high feeding has been the rule, a detail which has much to do with the untimely rotting of the florets. What is required instead of a fixed temperature is one that gives on entering the house a feeling of comfort without approaching to stultiness, i.e., it should be fairly warm, yet buoyant.

If this cannot be obtained by ventilation, artificial heat must be applied. During the night in damp or cold weather a gentle warmth in the hot water pipes dissipates moisture; and does away with the risk of it settling on the blooms or the glass.

Advantage should be taken of a heavy shower of rain to discover leaky places in the roof of the forcing or other houses. Drip from

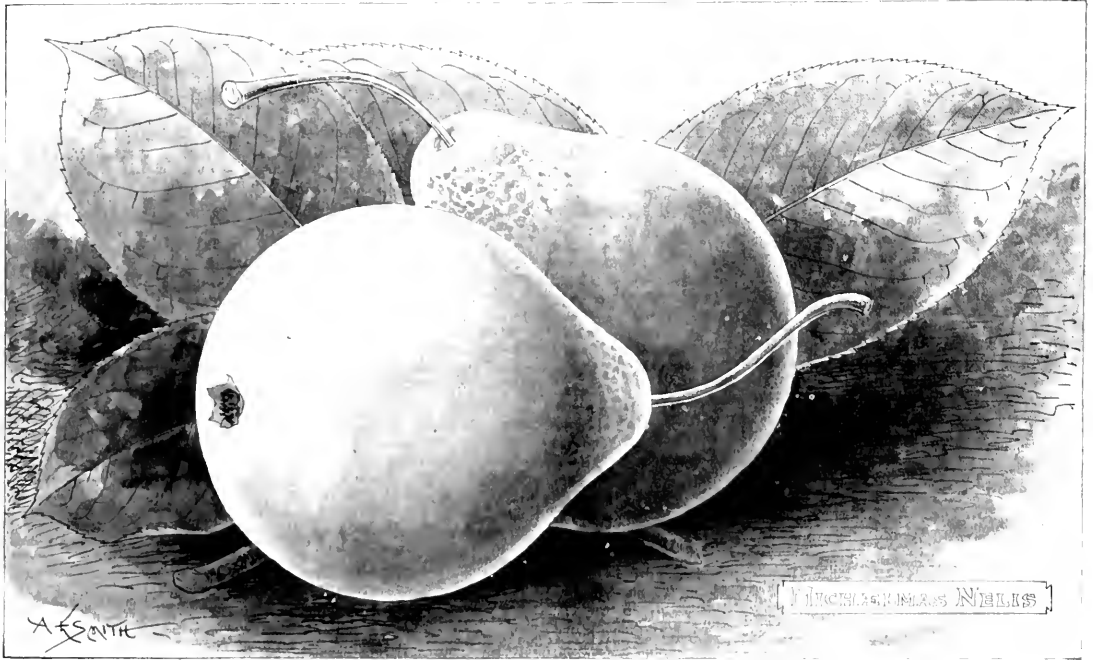


FIG. 82. NEW PEAR, VIRGINIA GRASS NELLIS. (SEE P. 272.)

remedy, cleanse the plants thoroughly with the syringe and clean water on a bright morning, and endeavour to have the foliage quite dry before nightfall.

Attention must now be given from this time onwards to fastening to neat stakes those expanding buds which have weak stalks, the tie being placed just under the bud. Some varieties, especially among the incurved section having weak peduncles, are unable to carry their flowers erect, and it is annoying to find a blossom three-parts expanded snapped off for want of a tie and a stake.

Earwigs are great pests, devouring the florets, especially on housed plants. The usual remedy of Broad Bean stalks cut into 9-inch lengths, or short rolls of black cloth, are both good traps; but the best manner of catching them is to go round after dark with a light, when they are feeding on the petals. They must be caught quickly, and nothing is better

to revisit the particular spot at night, and knowing this, it is not difficult to catch them after dark. Some bran laid on the soil in the pot will serve as a bait.

Cockroaches are sure to discover the blooms, which they soon disfigure, and the injury often follows the placing of some special variety in a warm house to hasten the opening of the blooms. When plants are standing some distance apart, a gentle shake will dislodge the cockroaches, and they fall to the floor, where they are readily destroyed. Caterpillars of a green colour often cause much damage, and must be sought for at night. The Chrysanthemum has numerous enemies, which must be destroyed if perfect blooms are expected.

Ventilation.—Affording air at night is a very important matter, for if too much cold air be admitted, especially on the side from which the wind is blowing, the blooms may suffer

faulty panes or loose putty may often be diverted from a plant by placing temporarily a piece of glass on the rafter, and may make all the difference between a first-class bloom and a spoiled one. Gardeners sometimes complain of the great amount of trouble that exhibiting entails, but such men do not as a rule occupy a very high position as exhibitors, and my experience is, that but little that is good is obtained in a garden where but a small amount of time and pains are expended by the gardener, *E. Molyneux*.

ENQUIRY.

CAN any reader give me the name of the oldest Seed and Nursery business in England, Scotland or Ireland, in which there is still a member bearing the name of the founder, and taking part in the management? *Ancient*.

HERBACEOUS BORDER.

THE PLANTING OF HERBACEOUS PEONIES.

It should be borne in mind by those who would grow the Peony in such a way that full justice may be done it, that there is more truth in the words of Messrs. Kelway's advertisement, that "now is the time to plant," than many suppose, there being no period of the year so well suited to the planting, and sometimes necessary division, of Peonies as the early months of autumn. Unfortunately for a few groups of hardy plants, there is a sort of prevalent notion that the best time to replant hardy things in general is when the plants start into growth in the spring. This is true of quite a large number of the perpetual-rooting subjects, and I have really seen it recommended that Peonies should be transplanted when they have made about 6 inches of growth. The hardy plantsman who really knows Peonies would no more dream of replanting at such a time, than a Lily specialist would for choice replant his Lilies at a like time. Spring planting, and late spring planting in particular, if not liable for absolute failure in Peonies, would so weaken them that it might take two years, and perhaps a longer time, to recover. The reason for this may or may not be clear, but it is more or less the result of the periodic root-action in these plants. All root-fibres are apparently formed some time prior to the flowering, and from this period they remain in the mature stage, so to speak, simply assisting the plant to flower, and finally in building up such ample leafage as shall presently result in the due formation of crown buds for another season's growth; and not until the early rains of autumn have moistened the now warm soil do we see any renewal of root-activity in these plants. Then it takes the form of new fibres, emitted from the principal, i.e., the larger and more fleshy roots, often referred to as tap-roots.

During the early autumn these new fibrous roots appear in plenty, and those who would cultivate the Peony well should take advantage of the interval, and plant, divide, or replant before these small fibres are put forth. How early or late these roots appear will depend largely on the heat of the summer, and the earliness or otherwise, as also on the quantity of the rainfall in early autumn. In plain language, then, there is no time that can compare with September for getting the herbaceous Peony planted. The plants can at this time be removed with the least possible check or loss, and the nearer in touch is the work with this time, the better for the plants and for everyone concerned.

Slow to grow and establish under ordinary conditions, these plants are infinitely worse when the planting is done at an unseasonable time. The large fleshy or tuberous roots in these plants are produced in the early spring and summer, when growth is in full swing; hence any root interference at such a time would in all probability completely undermine so important a function. Therefore one can only emphasise what has been said already, for its importance must not be disregarded. The other items calculated to make these showy flowers a greater success are items of culture, for which no half-hearted measures can in the least atone.

The Peony is indeed fond of rich food, and it matters little how rich or how deep the soil. Upon several occasions I have traced the tap roots to a depth of 3 feet without reaching the extremities. For preference, a good sound and rather heavy loam is properly regarded by

gardeners, but at Hampton, and also at Tooting, I have grown the herbaceous Peony with much success in a soil quite light, sandy, and much drained. Where these conditions of soil prevail, however, greater care will be needed in preparing, and for all such soils I would urge the liberal use of one kind of manure, viz., cow-manure. This buried a foot deep, and the ground trenched as deeply as possible, will assist in growing these plants to perfection. Beds may be on the turf in the forefront of shrubs, and other places, but always apart from large trees and their hungry roots.

Established beds I have always mulched heavily or fed copiously in winter time with strong liquid-manure, coupled with frequent applications of water during growth and up to the flowering period; and the labour and trouble have been fully repaid by the large handsome flowers the plants have produced. *E. H. Jenkins, Hampton Hill.*

[The warmth of the soil this year is higher than usual, and re-establishment of transplanted Peonies may be looked for, even when the work has been delayed to this date. Ed.]

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to E. I. MEANSIES, Esq., Cambridge Lodge, Fladdon Road, Canterbury.

Saprobiontis.—The plants are now in a forward state of growth, and will need every encouragement to assist them to expand their leaves and develop their flowers. In the London district it is difficult to get good size and colour in the flowers in midwinter, and frequently the flowers are destroyed with fog before they have expanded. I find it best to form the plants into two batches, one of which is kept at the cool end of the Orlontoglossum-house during winter, and the flowers do not open therefore until the days begin to lengthen. The other batch is placed in the cool intermediate-house, and the plants produce their flowers early; some of them are now expanding. Care must be taken where the plants are grown in warmth that they do not suffer from want of moisture at the roots.

Cypripediums.—The winter-flowering section of *Cypripediums* is one of the most useful classes of Orchids for general purposes. Their cultivation in most cases is comparatively easy, even when grown with other plants in houses not specially built for Orchids. A few years ago there were many who despised *C. insignis*, probably because it was such a tractable species; but what a difference since market-growers have found the old Silhet variety a profitable plant to grow for providing plants for cutting. The introduction of the so-called montanum section has brought the numerous yellow and spotted kinds which have of late formed such attractive subjects that they are considered worthy of inclusion, and are classed among the gems of our largest Orchid collections. Now that the flowers are getting into a forward condition, the stems should be neatly tied to sticks, so that when the flowers expand they may be displayed to the best advantage. Do not allow the plants to suffer for want of water at the roots, especially large specimens which have become pot-bound. *C. Spicerianum* is also expanding its flowers, and they will last a long time good upon the plants. If the plants are at all weakly, however, remove the flowers after a reasonable period. *C. Lee-annum*, and many other hybrids that have been derived from the part parentage of *C. Spicerianum*, are most useful plants for winter flowering. Place them in the lightest position, and afford them every encouragement in their effort to expand their flowers satisfactorily. The numerous varieties of *C. onanthum*, where grown in a cool temperature, also form useful subjects for winter flowering. The

free-flowering section, which is closely allied to the original *C. nitens* section of hybrid *Cypripediums*, form a useful succession to the above-mentioned kinds. These, like the parent species (*C. villosum* and *C. Boxalli*) are now completing their growth, and will shortly produce their flower-scapes. They are best suited with the conditions of a cool intermediate-house, and require a light position. The South American *Selenipediums*, and the hybrids that have been derived from the intercrossing of these, which have recently passed out of flower, may be repotted if this is necessary; but it is not advisable to do this unless the necessity actually exists. If the plants are well rooted, and have still some pot-room, it is better to clear away as much as possible of the old compost, and replace with new material. Afford water with discretion, and take care to avoid drip falling into the centre of the growths.

THE FLOWER GARDEN.

By T. H. STADY, Gardener to Lord Pottimore, Pottimore Park, Exeter.

Bedding-stock.—Provision must now be made for housing the young stock of *Pelargoniums*, &c. Some frames from which frost and damp can be excluded would suit them best, but in many gardens it is necessary to place them in vineries from which the crops are cut. Do not place the plants too closely together, nor afford them more water during the winter than is really necessary. Remove all partly decaying leaves, and anything likely to cause dampness. Plants of a more tender character, such as *Colons*, *Tropaeolums*, *Alternantheras*, *Mesembryanthemums*, *Iresines*, &c., must be placed on shelves near the roof-glass, in a temperature of about 55°, and where the air will circulate around them.

Mixed borders.—The recent rains have considerably benefited the plants, and any contemplated planting or re-arranging of such borders may soon be commenced. Where possible, the ground may be prepared any time during the present month, if for new borders, trenching it thoroughly beforehand, and adding what manure may be necessary. This will largely depend upon the nature of the soil. If the plants are to remain several years in the borders, the present is the best opportunity for enriching the soil, as it is not easy to add natural manures when the borders are well filled with plants. *Gaillardias* are most useful for making a display in late autumn, and if these be obtained in small pots, they may be planted out during the next few weeks. Young plants of the Oriental Poppies should be transplanted before making much fresh growth. *Heuchera sanguinea*, if it has been planted two or three years, will be better for being lifted and divided, planting it in a fresh spot in the border, if possible. This plant appears to flower more freely the first and second year after planting. The autumn-flowering *Asters* or *Michaelmas Daisies* are flowering profusely this season; this is another plant which in our soil requires lifting and dividing about every two years. This practice may not be necessary in poorer or lighter soils. If the ground is moist, commence the work at once, and the plants will establish themselves before the winter.

THE HARDY FRUIT GARDEN.

By C. HERRICK.

Preparing Ground for Fruit-Trees.—With the approach of the planting season, the preparation of the ground should receive early attention, for the heavy rains of the past week or two having softened the soil, digging and trenching may be carried out without any difficulty, and the earlier the better. The old practice of making a small round hole in which to plant a tree in should give place to the more sensible one of making a hole at the least 6 feet in diameter, or of trenching the ground throughout the piece of land to be planted; and if the soil be of a heavy nature, add a heavy dressing of quicklime, or lime-rubbish and wood-ashes, and mixing these with the staple, as the work of digging proceeds. Fresh

manure should not be used for Apples, Pears, Plums, or Cherries, unless the ground is known to be out of condition; but for Strawberries and bush-fruits, Raspberries, and Blackberries, a liberal application of manure does good. The kinds and varieties of trees to be planted should be decided upon, and early orders sent to the nurseryman. Where circumstances permit a visit to the nursery should be made at this season, and the condition of the trees ascertained before the leaves fall; and if a selection be made now, the purchaser should know exactly what sort of trees he will receive.

Late Plums.—The weather has become much cooler and heavy showers of rain are frequent, and these damage Plums that are left on the trees. It will be prudent to gather all of the dessert Plums and lay them thickly on the fruit-room shelves, or in small boxes, and put them in a cool, dry place. The fruits should be quite dry when gathered; those that are not quite ripe may be ripened a few at a time by placing them in a wicker or other slightly warm and dry house.

Late Kitchen Plums may be left on the trees if desired, but if rainy weather continues it will be better to gather them, before they split badly and decay. Such dessert Plums as Coe's Golden Drop and Ickworth Imperatrice may be kept in good condition for a considerable length of time if wrapped separately in tissue-paper and preserved carefully under the conditions I have described.

Fruit Gathering.—Most varieties of Apples and Pears, excepting those whose season is the latest, may now be stored. The latest varieties of Apples and Pears keep much longer and firmer if allowed to remain on the trees as long as it is safe. Choice varieties of both should be laid with care in a single layer, whereas commoner fruit may be placed 2 and 1 layers deep. In carrying fine, choice fruit to the fruit-room use paper-lined boxes or baskets. Neither straw nor hay should be placed on the shelves, the smooth wood being more suitable for placing the fruits upon.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLFE, Bleton, East Badleigh, Devonshire.

Celery.—Earth up succession crops. That which is the latest put out will be better if left uncultivated for the present, the plants growing faster and the whole plant will be harder and better able to withstand frost and wet than plants that are moulded up or coddled too much in early autumn.

Lettuce.—Set out plants 6 inches apart on a sheltered border from sowings made early in last month. Stir the soil frequently between the plants of all ages; look out for slugs, sprinkling quick-lime over the land in the evening and early morning, or they will soon devour the smaller plants.

Corn Salad.—A sowing may now be made in shallow drills for early spring use, and when large enough, thin the plants to 1 inch apart. The older outermost leaves only should be gathered, as with winter Spinach.

Beet.—In colder districts it will soon be necessary to lift these roots, but in the west it is more often than not deferred until well into November, a little frost being beneficial. In lifting the roots, first ease them with a digging-fork so that the tap-root may not be broken. Twist off the foliage a couple of inches above the root, and stack them in a dark, frost-proof shed with the crown pointing outwards, and place moderately dry sand or fine soil between the layers; only the best-formed medium sized roots should be reserved, as those are of the best flavour.

Carrots.—Full-grown roots may also be got up and stored in a similar manner to Beet-roots, although the cooler that Carrots can be kept in store the better. In Devon I have often stacked them against a north wall out-of-doors, with just a board fastened overhead to carry off the rain, and a mat or some straw

litter thrown over them in frosty weather. In dry weather well stir the ground between the plants of the latest sowings.

Routine work.—Weed and roll walks, and plant fox edgings if this could not be done in the spring. A small quantity of lime-rubble placed at the bottom of the trench the fox roots are laid in will benefit the plants. It recently cut down beds of Spearmint have failed to push up new growth, and green shoots are expected throughout the year, lose no time in lifting some of the roots, packing them in light soil in cutting boxes, and placing them in a pit that has a gentle bottom-heat, and but little top-heat. Do not let the soil in the boxes ever get dry; or place the boxes far from the glass, or growth will be spindly.

FRUITS UNDER GLASS.

By MALCOLM McSTYER, Gardener to Sir CHAS. TESSARS, The Grange, Innerleithen, Peeblesshire.

Peaches and Nectarines in the Earliest House.—The trees being now leafless, any pruning that may be necessary may receive attention. When due regard has been paid to summer disbudding, and the removal of shoots that have borne fruits, but little will remain to be done. The trees should be washed with weak sponges made with soft-soap, and dressed with an insecticide before they are fastened to the trellis. The borders should be lightly dug, and the surface-soil removed, and fresh loam added, with an addition of one fifth part of wood-ashes, and the same quantity of Thomson's Vine-manure. The roof-lights need not be made use of before November, when they should be put on to ward off rain and snow, air being freely admitted except during frost. Allow the outside borders of the early houses to have the benefit of whatever rains may fall this month, and afterwards protect them with tree-leaves and litter, with wooden shutters, or sheets of corrugated iron, tarpaulin, &c., later on.

Mid-season Peach-houses.—If the trees are unsatisfactory, now is the time to lift them, the wood being firm, and the leaves beginning to fall. This kind of work should be carried out without delay if the materials are prepared. Be particular as to the drainage, shorten the stronger roots, and bring any that are deep in the border nearer to the surface, and make the compost moderately firm. Good rather strong loam, with about one-sixth part of mortar-rubbish, will grow Peaches to perfection. Should the soil be light, add one-fourth part of clay-loam or of marl; and if very heavy, a similar quantity of road scrapings. If the soil be deficient in lime, add one-tenth part of chalk. Avoid the use of manure, except as a top-dressing or mulch. Afford water abundantly, and the roots will soon take to the new soil. Trees judiciously treated at the roots seldom fail to set a satisfactory crop of fruit.

Succession Peach-houses.—The foliage in these will be quite green at the present time, shoots tolerably firm, and the buds appearing in the axils of the leaves. In the case of young trees that show a tendency to make growth, it may be advisable to cut a trench at a distance from the stem equal to about one-third of the height of the trees, detaching all the roots, and if convenient leaving the trench open for ten days or a fortnight, when it may be filled firmly. This will check the tendency to a late growth, and contribute to the maturity of the wood and buds. Care must be taken to keep the soil in the part not disturbed perfectly moist; and detaching the roots will encourage the production of fresh rootlets, which will decidedly benefit the setting and stoning of the fruit in the ensuing season.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HERSHEY PACE, Esq., Prestwood Hall, Longborough.

The Plant Store.—Most of the climbers being out of bloom, and growth more or less complete, the pruning of such as have lost their foliage may be undertaken, and others which

obstruct light may be thinned out. A thorough cleansing of every plant and object should be done at this season, and thus ensure a satisfactory state of things during the winter. *Catalpums* and *Gloxinias* now being dried off may be put on their sides in a spot free from damp. Afford plenty of room to *Codiums*, *Peacenas*, *Aralias*, &c., required for decoration. The syringing of plants should now be greatly lessened, and all water applied in the forenoon. Put the blinds into store when dry, and be sure that drip or damp do not reach them. Maintain a temperature of 65 to 70 at night, and 5 to 10 higher in the daytime with sunshine. Rather than apply much fire-heat, let a lower temperature prevail.

The Greenhouse.—*Fuchsias* and *Pelargoniums*, now out of bloom, may be stored away in a moderately dry house free from frost, and any plants not worth retaining thrown away. Let the last batch of zonal *Pelargoniums* and *Salvia splendens* be brought into this house, and with the addition of the early-flowering *Chrysanthemums* a very cheerful display will be made. Afford ventilation by night and day, and in foggy weather apply some artificial heat, so as to dispel damp. The early-potted Roman *Hyacinths* and paper-white *Narcissus* should be examined, and any that are advanced in growth and well rooted may be removed to a cold frame and lightly shaded, preparatory to putting them into a forcing-house.

VARIORUM.

NOTES OF A WALK IN SOUTH DEVON.—

On a delightful Sunday afternoon, which happened to be the feast of St. Michael and All Angels in the Church's calendar—an afternoon that for clear bright sunshine and warmth might have done duty for a day in June or July—within a mile radius of this my new home, in the quiet and pretty village of Lymington, I was struck with the abundance of plants yet in flower, both cultivated and wild—that is, both in gardens and hedgerows. In the former *Dahlias*, both single and double, and *Cactas* varieties, were full of flower, and many of them forming huge, shrub-like clumps. *Roses* were freely in blossom, and under my own window, as I write, *Maréchal Niel* and other varieties reflect the bright sunshine. From this same window may also be seen in neighbouring gardens three fine trees of the *Sumac*, with its numerous chocolate-coloured spikes, set against the brilliant red foliage. Just now, in the hedges the most conspicuous plant is the *Bramble*, covered as the plants are with heavy crops of big, juicy fruits. So plentiful indeed are the *Blackberries* in this immediate neighbourhood, that at the further end of the village, and immediately opposite a row of cottages, is a well-favoured hedge, and the people sit at their doors, and do not even take the trouble to cross the road to gather the fruits. Nevertheless, quantities are brought round by the villagers and sold for next to nothing. At the bottoms of these hedges is a dense growth of the beautiful bright green fronds of the *Hart's-tongue*, mixed with the flowers of the *Lychnis*, *Periwinkle*, and purple *Deadnettle*. On one side of the doorway of a typical roadside house grew a golden *Enonymus* some 10 feet high, the foliage of which was a real golden-yellow, with the smallest proportion of green variation; and on the other side of the doorway was a bush of the same height of a *Myrtle*, densely covered with blossom.

These notes are brief recollections of an afternoon walk in a county new to me, where, amongst the fruit products, Apples of excellent quality are sold at one penny per pound. *John R. Jackson, Charewood, Lymington, South Devon.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for analysis, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Contributions should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

SALES FOR THE WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, Oct. 14 to 18.
Dutch Bulbs at Protheroe & Morris' Rooms

MONDAY, OCTOBER 14.—

Fruit Trees, at The Grove Park Nursery, Burlington Lane, Chiswick, by Protheroe & Morris
Bulbs, Roses, &c., at Stevens' Rooms
Bulbs at Messrs. Pollexfen & Co.'s Rooms

TUESDAY, OCTOBER 15.—

Nursery Stock, &c., at Shaw House, Melbourne, near Derby, by Protheroe & Morris.
Bulbs, Rose Trees, &c., at Pollexfen & Co.'s Rooms

WEDNESDAY, OCTOBER 16.—

Nursery Stock, &c., at Shaw House, Melbourne, near Derby, Conifers, &c., at The Tambridge Wells Nurseries, Tambridge Wells, by Protheroe & Morris.

Bulbs, Plants, &c., at Stevens' Rooms

Bulbs, at Pollexfen & Co.'s Rooms

THURSDAY, OCTOBER 17.—

Conifers, &c., at The Tambridge Wells Nurseries, Tambridge Wells; Nursery Stock, at The Floral Farms, Wisbech, by Protheroe & Morris.

Palms, Azaleas, and Bulbs, at Pollexfen & Co.'s Rooms

FRIDAY, OCTOBER 18.—

Nursery Stock, at The Floral Farms, Wisbech, by Protheroe & Morris.
Bulbs, at Pollexfen & Co.'s Rooms

For further particulars see our advertising columns

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick — 50°7

ACTUAL TEMPERATURES.—

LONDON.—October 9 (6 P.M.): Max. 60°; Min. 54°.
October 10.—Fine.

PROVINCES.—October 9 (6 P.M.): Max. 58°, Devon, Min. 42°, Shetland.

OUR Board of Agriculture has comparatively recently adopted the excellent plan of issuing to those most concerned "leaflets" or bulletins conveying sound practical advice, based on scientific data. In this manner, no doubt, information is conveyed to the very persons most interested. It is only a matter for regret that this plan, like that of sending itinerant lecturers and demonstrators into the rural districts, was not adopted long before. Cognisant of what was done in the United States, and with some personal knowledge of Belgian and French procedures, we advocated for years these and similar measures; but our words fell upon deaf ears. It was not till funds were placed at the disposal of the county councils that any general movement in this direction took place. We rejoice greatly at what has been and what is in process of establishment in the way of schools, demonstrations, and lecture-ships. It is of not the least consequence by whom the work is done, or by whom it was advocated, so long as it is done thoroughly. We have made a good beginning, but we are still much behind our cousins on the other side of the Atlantic. A new generation must develop before the importance of these methods of instruction is fully realised, and longer still before the country can reap the full benefit of the results. Ever-increasing competition, and ever-increasing population, will doubtless tend to hasten the pace, but the speed is of less moment than the solidity and thoroughness of the result.

A *Bulletin* that was recently received from

Ottawa, Canada, may serve to give point to our remarks. The *Canadian Bulletin* is devoted to Apple-culture, and has been prepared by Mr. W. T. MACORR. We all of us know the profusion and excellence of the Apples sent to us from Canada, from a climate which has few, if any, advantages over our own. Although some may make wry faces over the extent to which our home growers are ousted from the market, yet most of us recognise that, whilst the fault in some measure lies with ourselves, yet that the process is, from the nature of things, to a large extent, but by no means wholly, inevitable. We are, on the one hand, the slaves of circumstances; but, on the other, we can, if we are wise, adapt ourselves to our environment, as the modern phrase has it. We are beginning to realise that if we do not adapt ourselves to circumstances, we shall be supplanted by others who will better justify their existence by furnishing illustrations of the survival of the fittest.

In the meantime, it is agreeable to our self-complacent patriotism to witness the progress that is being made in Canada and other dominions of the British Empire. They may in their unfettered state be making faster progress in some departments than we can do in the old country with all its limitations, but that is only natural, and is indeed a subject for profound congratulation. The *Bulletin* on Apple-culture, to which we have referred, is so excellent that we should like to see a version of it adapted to the requirements of the home country. It is published by the Department of Agriculture, Ottawa, Canada, from whom, no doubt, copies may be had.

The *Bulletin* condenses the results of the experiments carried on for the last twelve years at the Central Farm. It contains full information as to the best methods of preparing the soil for an orchard, and of planting the trees, and caring for them afterwards. Pruning, grafting, and other cultural details are supplied. Descriptive lists of Apples, according to their season of ripening, and their suitability for particular localities, are given, as well as information on some of the more important insects injurious to the Apple. Hints are given as to the best means of raising seedling and cross-bred Apples for particular purposes, such as hardiness, long-keeping qualities, productiveness, and the like.

Chance has given us most of our best Apples in the past, but there is little doubt that more systematic procedures would furnish successful results in a shorter time and with a greater degree of certainty. Crosses with the Siberian Crab have already yielded good results as regards hardiness, quality, and productiveness. Russian Apples, as a whole, have not been successes in Canada, as it was thought they might have been. There are, however, a few of them which are very valuable, and as they are hardier than most varieties of American origin, they are useful to those who live near the extreme limits of successful Apple-culture. North of latitude 45 the Russian Apples increase in value the further north they are grown. The lesson to be learnt here appears to be that it is better to try and improve the native productions, if we may so call them, than to rely on newcomers from a different climate not so well adapted to the conditions of the home country.

Some Apples are known to be unproductive from sterility. This state of things may be obviated by planting the self-sterile varieties in juxtaposition with others, by whose pollen they will be impregnated when their own pollen is either imperfect or impotent. It is consequently necessary to plant trees which bloom at the same time in proximity to each other.

Chemical analysis of the ripe fruit show roughly that out of 100 parts there are 86.9 of water, 12.7 of organic matter, .28 of ash, and .0128 of nitrogen.

Of the ash remaining after burning, the average amount of the several constituents are: phosphoric acid, 8.98; potash, 55.2; soda, 2.6; oxide of iron, 1.72; lime, 4.38; magnesia, 1.27; silica, .60.

Northern Spy contains a much larger proportion of phosphoric acid than the average, viz., 11.68 per cent. The ash ingredients, however, are most abundant in the rind and in the core of the Apple, so that from a consumer's point of view their importance is to that extent little.

From similar tables here given it is shown that, so far as the fruits are concerned, the largest demand is on the potash in the soil, next the nitrogen, and lastly, the phosphoric acid. In the case of the leaves the nitrogen stood first.

For the supply of nitrogen, barnyard-manure, or the turning-in of a leguminous crop, are recommended. Potash is applied most economically in the form of wood-ashes, or where they cannot readily be procured, kainit may be used to furnish potash, and bone-meal and superphosphate to supply phosphoric acid.

Other details referring to the cultivation of the land, the pecking, sorting, storing, and packing of the fruits are given, as well as a valuable section on spraying. It is shown that unless spraying is thoroughly done with the proper apparatus at the right time, it is of comparatively little use. The early sprayings are the most important, and care should be taken to spray the lower as thoroughly as the upper surface of the leaves. Every leaf or fruit missed means a foothold for disease or insect pests.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees of the Royal Horticultural Society will take place on Tuesday, October 15, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. Papers on "Hardy Fruits for Scotland," by MESSRS. DONALD MACLEAN, JAMES DAY, and WILLIAM WRIGHT, will be read at 3 o'clock.

NEW HYBRIDS FROM PRIMULA ARCTOTIS.—In the *Gardenwelt* of September 7, 1901, Herr GEORG ARENS describes some new hybrid Primulas (*Primula arctotis* hybrida "Ronsdorf Hybrids"). These he has obtained by crossing the white *Primula arctotis* with *Primula alpina*, pubescens, viscosa, spectabilis, and other coloured alpine Primroses. The seedlings had the compact habit and globose flower-head of the mother, and the flowers varied in colour from pure white to pale rose and lilac, and to the brightest carmine and purplish-red. Further he crossed *Primula arctotis* with the yellow *Primula auricula alpina*, the yellow alpine *Auricula*. The young plants had partly the dwarf habit of the former, and partly the longer flower-stalk of the latter parent. The colour varied from delicate cream through sulphur-yellow, to the golden-yellow of *Auri-*

cula alpina. The results of these experiments are now in the market, and a coloured plate issued with No. 49 of this year's *Gardener* gives some idea of their beauty. There is little to remark about the culture of the *Primula aretoides* hybrids. The plants prosper in any rich porous garden soil that has not been freshly manured, and they succeed best in a semi-shady place, in which they are not exposed to the full glare of the sun. In times of prolonged drought, the needful moisture must be given. They are well adapted for shady nooks on rockeries. Propagation is effected by division of the root-stock, and by seeds. The latter, as with those of other alpine *Primroses*, are long in germinating, and at first the young plants progress but slowly. With average care they should, however, all bloom in the second year after sowing, and should develop each following year into greater beauty.

BOTANICAL MACAZINE.—The October number of this periodical, edited by Sir JOSEPH HOOKER, contains coloured illustrations and descriptions of the following plants:—

Eoachia Wendlandiana, t. 7757.—A tall pinnae-leaved Palm from the Fiji Islands, with a paniced inflorescence, the branches of which are dilated at the base into a globular expansion an inch in diameter, at first ivory-white, afterwards scarlet. This extraordinary Palm flowered in the Palm-house at Kew in February of the present year.

Habenaria Lugardi, Rolfe, t. 7798.—A tropical African species, with two orbicular, prominently nerved leaves and crest, many-flowered spike of white flowers, each with a very long cylindrical spur, 5 to 6 inches, Kew.

Civcraria pentactina, Hook. f., t. 7799.—A scandent plant, with very slender stems, stalked coriolate, roundish, palmately-lobed leaves and yellow flower-heads on long slender stalks, each flower-head about 3 inches across. It is supposed to be a native of South Africa, Kew.

Calorhabdos caudoptera, Hance, t. 7800.—A Chinese herb, with shortly-stalked, lanceolate, dentate leaves, and dense erect spikes of purplish flowers. The genus is allied to *Veronica*, Kew.

Rubus palmatus, Thunberg, t. 7801.—An elegant species, with palmately-lobed leaves, the lobes lanceolate. The flowers are on long slender stalks, with linear sepals, and oblong white petals. Native of Japan and China, Kew.

CHRYSANTHEMUMS.—We have received from several widely separate sources specimens of *Chrysanthemums* showing the same conditions. The leaves from below upward are dying, or mostly dead, browned and shrivelled, as though burnt by lightning. Neither fungus nor insect can be detected by our expert referees, nor by ourselves. The roots and stems are perfectly healthy, and the specimens come from cultivators whose methods are not likely to be at fault. In these days bacteria play the part that the weather used to do, and it is possible this is a bacterial disease. It reminds us of the conditions called fire-blight—but the whole thing is at present mysterious.

STOCK-TAKING: SEPTEMBER.—The Trade and Navigation Returns for September show a continued falling off in both imports and exports—in several instances we should say the values of both; more work has to be done for the same money, competition increasing in volume, in conjunction with rates and taxes at home, which assists in circumscribing orders at home and operations abroad. Imports have decreased in value for the month

by £3,021,061; exports by £2,558,509. Here are the usual figures from the "summary" table of imports:—

Imports	1899	1901	Difference.
	£	£	£
Total value	41,672,882	38,268,791	-3,404,091
(A.) Articles of food and drink—duty free	12,987,667	12,849,888	-137,779
(B.) Articles of food and drink—dutiable	4,769,692	3,419,253	-1,350,439
Raw materials for textile manufactures	2,853,324	2,849,263	-4,061
Raw materials for sundry industries and manufactures	6,183,416	5,189,448	-1,093,968
(C.) Miscellaneous articles	1,788,649	1,512,172	-276,477
(D.) Parcel Post	84,176	199,917	+115,741

It is satisfactory to note that provisions continue plentiful and cheap at market, and the percentage of unemployed labour remains low. Projects are on foot to enable our capitalists and manufacturers to meet the pressing attacks of our good friends outside our borders who desire and design to clip our wings and cripple our efforts at expanding trade. Coming to fruits and vegetables, the reader will note sundry reductions which are to a great extent counter-balanced by increases elsewhere—one instance will be found in the now popular Banana. The following are the figures selected from the returns for September:—

Imports	1899	1901	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw			
Apples	131,176	71,859	-59,317
Apples and Peaches	982	341	-641
Bananas and bunches	119,882	209,311	+189,429
Cherries	—	141	+141
Currants	4	74	+70
Grapes	112,651	116,436	+3,785
Lemons	36,412	23,737	-12,675
Nuts—Almonds	21,265	8,888	-12,377
Other, used as fruit	33,156	74,413	+41,257
Oranges	—	3,988	+3,988
Pears	126,942	76,663	-50,279
Pineapples	88,959	34,763	-54,196
Unenumerated, raw	32,914	83,193	+50,279

Vegetables, raw	1899	1901	Difference.
	Cwt.	Cwt.	Cwt.
Onions	741,631	846,285	+104,654
Potatoes	212,591	145,144	-67,447
Tomatoes	91,468	75,412	-16,056
Unenumerated, raw, in enumerated value	4,968,841	4,141,459	-827,382

The imports for the past month were £38,208,879, against £41,232,852 for the same period last year, showing a falling off to the value of £3,021,061. The value of the imports for the past nine months is placed at £381,469,711. Those for the same months in 1900 foot up at £379,187,612—an increase of £2,282,099. We come now to a brief note concerning the—

EXPORTS.

These for September amounted to £21,371,302, against £21,559,811 for September, 1900—a decrease of £188,509. As noted, political disturbances—wars and rumours of the same—have largely operated here, and will probably continue to do so for some time to come. We may note the "pushfulness" of Russia in the East. As to the nine months' trade, that totals up at £209,359,010, against the same period in 1900 of £218,171,755—a decrease of £8,812,745. After all, considering the enormous volume of our trade, and the great elasticity shown in past years, we do not find much room for adopting a despondent tone.

MR. G. HUMPHREY.—A presentation was made to Mr. G. HUMPHREY, on Tuesday, the 21th ult., on his retirement from the post of head gardener at Nash Court, after twenty-three years' service. The presentation, which was privately made, owing to the illness of Mr. HUMPHREY, took the form of a purse of money (subscribed for by several Nash Court "old boys," who had at different times served under Mr. HUMPHREY), together with a suitable address and a list of the subscribers' names. His many friends wish him a speedy recovery from his present indisposition.

"KEW BULLETIN."—The number for September has lately been issued. It comprises technical descriptions of new or previously undescribed plants from various parts of Africa, China, tropical America, and other regions, as well as numerous Orchids described by Mr. ROLFE. A very large number of new fungi are described by Mr. MASSEE. Referring to the resignation of Mr. NICHOLSON in fitting terms, the hope is expressed that Kew may still retain the benefit of Mr. NICHOLSON'S botanical experience. Details are also given relating to the career of the late Dr. SUTHERLAND, of Natal, and of Captain WELBY, known for his expedition across Tibet, but who received his death wound in the Transvaal.

"SWEET VIOLETS, PENNY A BUNCH!"—A correspondent ventures to doubt the botanical knowledge of the street flower-girls! They sold him what he took to be a bunch of Parma Violets. Doubting their reality, he passed them on to us, and we regret to have to say that the vendor's botany is, to say the least, peculiar. The Violets are really flower-heads of a Composite, apparently the double-flowered form of *Achillea ptarmica*, steeped in aniline dye. On soaking one of the flower-heads the dye is washed out, and the traces of leaves are by no means those of a Violet. They are the name of the plant whose common name is "Sneeze Wort."

"GARDEN LIFE."—This is a new weekly periodical, published at 1d. It affords one more illustration that there is life in the garden, for in spite of there being already four or five similar publications, there appears to be room for another. The journal is issued modestly, and commands all the more trust in consequence. That trust, so far as we can judge from the articles in the present number, will be amply justified. The illustrations, type, and paper are excellent at the price. The publishing office is at Hatton House, Great Queen Street, London, W.C. We trust our contemporary will enjoy a long and prosperous life.

A NEW BOTANICAL JOURNAL.—Mr. A. G. TANSLEY proposes to issue, at monthly intervals, a new periodical, devised to cover the whole range of modern botany.

HARPER ADAMS' AGRICULTURAL COLLEGE.—This College, established for the promotion and diffusion of agricultural knowledge, was opened on the 26th ult. It was built at Edgmond, near Newport, Shropshire, with means provided under the will of the late T. HARPER ADAMS, Esq. Every provision seems to have been made for instruction in all departments of scientific and practical agriculture, stock-farming, vegetable and fruit-culture, laboratories, a botanic garden, dairies, cheese-rooms, blacksmith's forge, a carpenter's shop, are among the means provided. The Principal is Mr. P. H. FORBES, who gives instruction in agriculture and ontology; Mr. C. W. H. GREAVES takes the biological department; Mr. PERCYAL is the instructor in horticulture.

The College is intended, said Mr. HANBURY, the President of the Board of Agriculture, in his inaugural address, to teach local farmers to get more out of the land, and to make 20s. where now they only get a pound. Speaking of education and of State-aid, Mr. HANBURY said:—

That if agricultural education was not the one panacea for all the ills of agriculture, at any rate it was one of them. And what had been done for them by the State with regard to education? At present they had to spend in grants the small sum of £500 for the whole of the United Kingdom. In France, for the same purpose, £153,000 was granted by the State. In Denmark, £208,000 was granted; in Canada, £156,000; and in the United States, £26,000. He would go further, and compare the assistance given to agriculture with that given to the towns. There were science and art classes for giving the people technical education, for training them up to (high) grades and occupations they were going to follow in their future life. He found that out of the science and art grants given by the Board of Education, out of £506, £205 went to the towns, and £1 went to the rural population. That was not a fair proportion. He was bound to say many a landlord might have spent his money more profitably than in building those model farms and dairies. He would go further, and say he honestly believed that a great many of the Shows did not do the good they ought to do. Take for instance, the cattle shows. What was wanted was cattle the butcher would buy. At a great many of those shows they got fat monstrosities, on which many pounds had been spent, and nobody bought them except the butcher who hung them up in his shop as an advertisement that he had bought it at such a show.

Take another point. He went to the elementary schools, and he found that the education there given did its best to sicken a child of country life. A great many of the children were brought up as though they were going to be schoolmasters, and were trained as though they were going to live in the towns. They wanted the children to be taught in a way which would give them an interest in their country life, and make them men and women in their rural surroundings. He was pained to hear that this college had already done good work, for he believed that Mr. FOTHERS had begun to train elementary teachers, so as to enable them to take advantage of the more liberal Code the Board of Education had given. But it was of no use the Board saying they might take these Nature-lessons instead of so much grammar unless the school managers took more interest in it. He wished more laymen would take an interest in the schools, but whether the managers were clergy or laymen, they did not do their duty if they did not encourage Nature-study. It might be asked, what is the good of science? He took science to mean this: however practical a man might be, it was impossible for him, in his own experience, to have learned everything. What science meant was, that other people had been experimenting, and had found that those experiments had been a success, and that it made money to work in that way. He therefore asked them not to be afraid of the word "science," and, above all, not to think, because they were practical men, that they knew everything, for there was no trade in the world in which there was any man who had occupied the whole region of science, or of the whole region of knowledge. He thought they made a mistake in making experiments over and over again. He was a little afraid the County Councils, in too many instances, were going over the same ground over and over again. He should like to see more demonstrations made all over the country—not mere pocket-handkerchief demonstrations over a small field, but, if they were to be any good, over several fields of a farm. Although we prided ourselves on being great business people, we were a happy-go-lucky people. We had not the same rigid method as other people. Business habits were just as necessary in farming as in other trades. He did not know how it was with others, but he knew how difficult it was to get a book-keeper to properly keep accounts. He was afraid few of them kept their accounts as correctly as they ought to do, and yet proper account-keeping was the "A. B. C." of the whole business. He went on to speak of the necessity for combination among farmers for the common benefit, and terminated a useful address by declaring the College open.

TOWN TREES.—No doubt the Plane is on the whole the best tree for London, but our choice is by no means limited to that genus. We have often given lists of suitable trees, but among them we do not remember to have cited the monophylla, or one-leaved variety of the common Ash. We came across a clump of these trees a few days since in Kensington Gardens, and were struck with their dense compact habit, and the rich deep green of the foliage as yet unchanged by autumnal chills.

The older trees in these gardens are in a sad state; three or four years of drought and drainage have wrought havoc. Every effort should be made to plant other trees, not in the same but in different spots.

DIASCIA BARBERE.—A curious little annual of the Scrophularia family was shown recently at a meeting of the Royal Horticultural Society. Our illustration (fig. 83), drawn for us by Mr. W. G. SMITH, shows that the plant is near to *Alonsoa*, but differs in the presence of two spurs projecting from the back of the two lateral lobes of the lip. In *Linaria* there is but one such spur, but in the peloriate variety there are five. This *Diascia* shows, therefore, an intermediate condition. The flowers are of a pale pink colour. The species are natives of South Africa.



FIG. 83.—DIASCIA BARBERE. FLOWERS PALE PINK. GREENHOUSE ANNUAL.

PUBLICATIONS RECEIVED.—*Kew Bulletin of Miscellaneous Information*, Appendix IV., 1901. List of the staffs of the Royal Botanic Gardens, Kew, and of the botanical departments and establishments at home, and in India and the Colonies, in correspondence with Kew.—*Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew*, January to March, 1901. Contents: List of Contributors to the Herbarium, brought down to Dec. 31, 1899; and Miscellaneous Notes.—From the Society for the Protection of Birds, *Essay on the Protection of British Birds*. The paper to which was awarded the first prize in the Society's Essay Competition, 1900-1901.—*The Journal of the Board of Agriculture*, September. Contents: Winter Washing of Fruit Trees; Colorado Beetle; E. V. Theobald; Plum-tree Boring Tortrix; Agricultural Returns of 1900; The Apple Saw-fly; Reports on Foreign Crops, &c.—*Bulletin of the Botanical Department, Jamaica*, September. Contents: Historical Notes on Economic Plants in Jamaica; Yield of Rubber, Almond-bag Worm, and Protection of Trees against Ants.—*Journal of the Department of Agriculture of Western Australia*, August. Contents: Wheaton Hay for Horses;

Cultivation of Sweet Potatoes, by Percy G. Wicken; Insectivorous Birds of W. Australia, by Robert Hall; Insect Pests (Circular to Fruit Growers), by L. Lindley-Cowen; Pruning, by A. Despeissis; and various Notes relating to the Live Stock of the Farm.—*The Queensland Agricultural Journal*, August. Among the contents are papers on: Spraying Vegetables with Paris Green; Disc-harrowing of Lucerne; Value of Barley and Pumpkins as Horse Feed; A Water-Hyacinth Destroyer; Orchard Notes; Contributions to the Flora of New Guinea and Stink-grass of Brazil, by F. M. Bailey; Horticultural Notes, Tropical Industries, &c.—From the United States Department of Agriculture, Division of Vegetable Physiology and Pathology. *Bulletin No. 28, Cultural Characters of Four One-Flagellate Yellow Bacteria Parasitic on Plants*, by Erwin F. Smith.—*Report of the Connecticut Agricultural Experiment Station for 1900*. Contains also papers on Fertilisers; on Food Products; and also on the Protection of Shade Trees, by E. H. Jenkins and W. E. Britton; this last article is illustrated by beautiful plates.

THE WINTER WASHING OF FRUIT-TREES.

ON this subject the September issue of the *Journal of the Board of Agriculture* gives the following useful information:—

"A neglected orchard not only harbours all manner of insect enemies during the winter, which come out in the spring, and commence their ravages in that particular orchard, but it forms a nursery or breeding-ground from which other orchards are supplied with noxious insects. It is essential, therefore, that all such orchards should be treated in some way to stop the damage that is caused by the various insect-pests they encourage.

For this purpose a caustic or burning wash, known as caustic alkali wash, is most successful. This mixture serves a double function. It removes, by means of its caustic properties, all vegetal incumbrances, moss and lichen; and at the same time it causes all rough and decaying bark to fall off. A tree so treated soon assumes a more healthy appearance. By the removal of the moss and lichen from the trees, the favourite quarters of many hibernating insects are destroyed. Beneath the vegetal growths and rough bark found on fruit-trees, we find during the winter the Woolly aphid, the Apple-blossom weevil, the earwig, the Codlin maggot, thrips, and various other small insects. The destruction of their winter quarters places these often serious pests in unfavourable circumstances, and they cease to increase in abnormal numbers. Scale insects, of which two at least are more or less harmful in this country, namely, the Apple-bark louse or Mussel-scale, and the brown Curran scale, may also be destroyed by caustic alkali wash. At present this wash is mainly recommended for cleaning the trees in an orchard, and thus destroying the shelter of various insects during the winter, and for killing certain hibernating pests themselves, as the Codlin maggot, Woolly aphid, and others. It certainly has no effect in the open on the ova of the Winter-moth, Læcny-moth, and those of certain plant lice.

To prepare caustic alkali wash, first dissolve 1 lb. of commercial caustic soda in water, then 1 lb. of crude potash in water. When both have been dissolved, mix the two well together, then add ½ lb. of agricultural treacle; stir well, and add sufficient water to make up to 10 gallons.

The best time to spray the trees is about the middle of February, as some insect and mite-eggs are then more liable to be affected than earlier in the winter, and it is then not too late to harm any developing buds."

MARTIN HOPE SUTTON.

The grandfather of Martin Hope Sutton, whose death in the 4th inst. is our sad duty to record, was for the greater part of his lifetime a resident at Blackheath, where he lived as a private gentleman. His wealth descended to his son John, who for a time remained in London, but eventually settled in Reading, and here on March 14, 1815, was born to him a son. It was a memorable day in the family history, marked by two grave calamities—the loss of a large sum of money through the stoppage of a bank, and that of an extensive business with which John Sutton was connected. As an expression of faith that the bright future was in store for the son, his parents named him "Hope," and certainly the birth of this child proved to be the greatest blessing the family could have received at this severe crisis in its fortunes.

From his first years Martin Hope Sutton was the life of his father's household, and the parents were anxious that he should follow the example of his elder brother by adopting a profession, while the whole disposition of the youth inclined distinctly to a business career. He found recreation in reading botanical works and in the practical study of botany, especially in relation to flowers, grasses, and forage plants. In these pursuits his encouragement was given him by the father. On the contrary, parental anxiety being acute when it was discovered that books on botany were smuggled to the bedroom, and that in early morning, before the household rose, the garden had been employed as an experimental ground for comparative trials of seeds.

The reading of books on gardening naturally kindled the desire to visit famous gardens and nurseries. As funds were lacking, holidays were used for walking tours. On one occasion he stayed in three days the ground of Brown at Slough, Roundels at Brentford, thence through Staines and Sunninghill to Knap Hill and Bagshot to obtain a sight of American plants, and returning by a different route, he arrived at Reading about noon, after a morning walk of two or three miles. As opportunities could be seized, some type of bird kind were taken from thirty to forty birds being frequently covered in a single day. These were happy experiences in the life of Martin Hope Sutton, but they were not allowed to interfere in the smallest degree with the discharge of home duties.

Later on it became possible, by means of the railway, coaches, and private conveyances, to extend these visits to greater distances, such as Blenheim and Chatsworth in England, and finally to some of the most interesting continental gardens. From this experience this gained a knowledge of plants and landscape gardening was acquired, which proved of almost value in business, and it inspired the idea of starting a trial ground of his own in Reading. The first seed of this ever seen in the neighbourhood became the object of great interest.

Upon his father's old business of corn, straw, and miller, founded in 1817, Martin Hope Sutton in 1847 saw his way clear to engrain the flower and vegetable seed trade, and he actually induced his father to join him as a partner, under the title of "John Sutton & Son." We have often heard from Mr. Sutton of the very mode of way in which the now vast seed business grew.

In 1848 the younger brother Alfred was received into partnership, when the title of the firm was altered to "John Sutton & Sons." To their great happiness and mutual help, the two brothers worked harmoniously, together until 1858, when both retired on the same day leaving the business in the hands of their sons.

The disastrous Irish famine of 1847 turned the thoughts of the elder brother in a new direction. Alfred took over that branch of the business connected with ornamental gardening, and Martin Hope was able for the first time, on a large scale, to show that the experiments he had made in cultivating, adapting, and selecting vegetables and plants for food, were not mere dreams of an enthusiast, but were capable of being turned to account in the service of humanity. Public notice was drawn to the merits of his seedlings, and the substitutes he suggested for the devastated Potato-crop were at once accepted by the Government.

At this period the penny post had just been instituted, and the extension of railways was rapidly proceeding. The happy thought occurred to Martin Hope Sutton that it was quite as reasonable to propagate the crops of seeds, and to transport them as far as convenient to send a letter a mile or so to the north of Scotland for the uniform charge of one penny. Reading, by its connection with London, at once became a centre from which all parts of the Kingdom could be served with speed and economy.

Another innovation, common to-day but unknown then, was the compiling and supplying free of charge, to the public, of a list of seeds, for the use of amateurs, dealers, and growers. In 1846, containing descriptions of flowers and vegetables, including the proper methods of cultivating them, revolutionised the system then in vogue.

In 1856 the publication was greatly enlarged, and for the first time it was issued as *Sutton's Seed-catalogue*. Under this title it has since been published annually, and has become as great a

favourite with skilled gardeners as it has always been among those who are strictly entitled to be called amateurs.

From early years the characteristics, feeding value, and uses of various grasses, captivated his attention. He studied them constantly under natural conditions, and experimented with each as a cultivated plant, alone and in company with other varieties. In 1851 he contributed to the *Journal of the Royal Agricultural Society of England*, at the request of the editor, Mr. Philip Pusey, an article on "Permanent Pastures." This was printed by desire, and has since passed through many editions. It was afterwards incorporated in the larger work, *Practical Treatise on Turf-grasses*, written by his eldest son, Martin John Sutton.

Martin Hope Sutton's botanical knowledge was never better applied than when he learned the importance of laying down land to grass with good varieties indigenous to each description of soil, and which are therefore adapted to produce the best results on the several geological formations. Before this discovery could be brought to a practical issue, thousands of trials, under varying conditions were necessary; and if there is any one man who has deserved well of his country for making two blades of grass grow where only one grew before, it certainly is Martin Hope Sutton. His carefully proportioned prescriptions have been sown in almost every parish of the kingdom, with the result that dry crops are in many cases much greater than they were sixty years ago.

According to Mr. Sutton's own view, the position he took concerning the great question of seed adulteration



THE LAD MARTIN HOPE SUTTON.

was one of the most important events in his life. At the present time it is not possible to conceive the extent to which adulteration was then carried. The almost universal prevalence of this vicious system may perhaps be understood from the fact that it was not regarded as dishonest or fraudulent, indeed, the plea generally entertained was that only by such a system could the seed trade be conducted.

The trade in dead seeds formed an important off-lateral branch of the trade, but as seeds which had lost their vitality through long keeping spoiled the sample machines were constructed for destroying the germs of new seeds without injury to their appearance. In every case a cheap variety was sterilized for mixing with seeds which were similar in form and colour, but of higher value. Killed Rape, worth less than three-pence per pound, was mixed with Calbage, Broccoli, and other round seeds worth many shillings per pound. This is only one of many examples that might be cited.

Mr. Sutton came to the conclusion that the only way to ensure reliable seeds was to have them grown under his own superintendence and from his own stocks by men who would deliver the produce straight to the Reading granaries without the mediation of a wholesale house. He visited those counties which from their soil and climate were especially suited for growing and harvesting seeds, and engaged a number of growers who well understood the business and were willing to devote the requisite care to the crops in order to maintain a high standard of excellence.

The immediate effect of sowing new seeds free from any admixture of old or killed seeds was startling. The crops grown by customers attracted the attention of their neighbours, and as a result the business of the

Suttons increased by leaps and bounds, until by general consent it has become one of the largest of its kind in the world.

There is, too, a library, reading-room, and restaurant. Such efforts, wherever made, help to redeem this money-making age from reproach, and encourage others who are seeking to solve its perplexing problems.

General Viscount Fitzhard and the late Marquis of Hertford were both early friends of Martin Hope Sutton. Their close association with the court, while emigrants at Windsor, recently resulted in a command to Mr. Sutton to attend the Royal farms, where he had opportunities of seeing Her Majesty and the Royal family under the most pleasing and happy auspices, free from all state formalities. He used also to go through the Royal gardens, and inspect the plots of ground set apart for the Princes and Princesses, who had separate sets of garden tools, wheelbarrows, water-cans, &c., all distinguished by name. This was during the lifetime of the Prince Consort, who made a great point of the teaching of horticulture to the Royal children.

At another time Mr. Sutton visited the Swiss Cottage, Osborne, where various domestic operations were taught, and the rules of etiquette observed by the Royal children, who on certain days issued invitations to the Queen and other relatives to take tea with them. These invitations were formally accepted and the appointments kept.

At the Bawn at Osborne, overlooking the Solent, a kind of summer-house formerly existed, where in almost all weathers Her Majesty was accustomed to receive and reply to despatches. This building was replaced in 1850 by the bungalow erected for the Queen in the show ground of the Royal Agricultural Society of England, held that year in Windsor Great Park. At the close of the meeting, Her Majesty was graciously pleased to accept of a gift from the same Society of the plants forming the beautiful miniature garden which had been planted around the bungalow by the Suttons.

During the long and eventful life of Martin Hope Sutton, no occasion afforded him greater pleasure than the honour of welcoming under his own roof at Reading the Prince of Wales, the Duke of Connaught, and the Duke of Clarence.

Mr. Sutton married in 1815 Sophia Woodhouse, second daughter of the late William Warwick, of Witley Rise, Berks, by whom he had five sons, Mr. John, Mr. Ernest William, Arthur Warwick, Claude Hope, and Leonard Goodhart, and four daughters.

Mr. Sutton was frequently urged to take an active share in political and municipal life, but although he followed the progress of national events with keen interest, while every worthy cause in his native town enlisted his sympathy and received from him cordial support, he invariably declined to take any step which might lead to public honours. His strong evangelical views impelled him to devote his energies to still higher interests, and he became closely associated with great religious institutions.

The managing of the City Mission Home at Ventnor, entirely at his own expense, is one of many instances when at a time of need he willingly devoted his means to the support of a great undertaking. And if he may be truly said to be let not his left hand know what his right hand doeth, some of his largest gifts were anonymous, and his chief subscriptions were sent direct to headquarters, instead of through local agencies, so that his native town knew little of the extent of his liberality.

In regard school work Mr. Sutton was an enthusiast. He engaged a room in the most respectable quarter of the town, where a respectable person could sensibly venture alone, and he induced a band of earnest young men to join him in his hazardous enterprise. On the opening night the ragamuffins of the district trooped in, unutterably dirty, ragged, and bent on mischief. They also had a language of their own. The ringleaders wore swags, accented with the guttural growl spoken by the few natives of that day, and these boys made a point of attending in full equipments, so that it was only necessary to shake their clothes to raise a cloud of soil; and the stocking cap worn as a protection when at work, was always in readiness to shew a companion or to dust a teacher's collar. The character of these boys may be inferred from a single incident. After the school had begun the day's work, one of the boys, a French brother of the late Archbishop of Dublin, paid a visit to the room, and was very gratified with what he saw. On attempting to speak to the boys, one of the chimney sweeps, impressed by the tall giant figure in a long black coat, concluded that a policeman had come, and that he was "wanted." Embarrassed he bolted up the chimney. As the words "swamp" were uttered, the ringleader crowded others outside the windows laughing and gesticulating. It was then discovered that the boy had peached the chimney pot, where his head and hands were visible from the outside, but he was unable to struggle through. He was rescued from his unconscionable position and great excitement.

In conjunction with his brother Alfred, who died in August, 1857, Martin Hope Sutton built three schools, mission-rooms, cafes, and workmen's restaurants in

different parts of Reading, long before school boards and temperance hotels came into existence.

Few men achieve the ideals of early days. Martin Hope Sutton was among the fortunate few. Religion to him was imbued with the perfect love that casteth out fear. Earnest himself, he was endowed with the rare gift of inspiring earnestness in others. As a friend, staunch, true, and constant; as an employer, considerate, sympathetic, and generous in his appreciation of services rendered. These qualities endeared him to his people, who felt his presence as a charm; and he delighted in finding for them means of recreation, in which he heartily joined. What he was to his family they alone can tell. Among the wider circle of his friends, they loved him most who knew him best.

GARDENERS AND GARDENING IN SOUTH AFRICA.

BELIEVING that many gardeners are now contemplating taking up their abode in South Africa, with a view to making a fortune, and having had private and nursery experience of gardens in South Africa, I can give them some information, and timely advice which will perhaps help them to come to a conclusion as to whether it is or is not advisable to go there; and if they decide upon doing so, I may tell them what they may expect to find when landed there.

In the first place, no gardener should emigrate unless he has some appointment to take up, and not even then unless he is willing to work as hard as the generality of gardeners do in this country. He must be a good hand at budding and grafting, and have a knowledge of the florists' art. If he has a knowledge of the seed trade, he will find that it will be of great service to him. Let not the gardener think that his work will be confined strictly to the gardening profession, for he may be called upon to help build a glasshouse, a stable, or perhaps a dwelling-house, and many other items that are not strictly gardening; but, on the other hand, such work as digging, hoeing, or weeding is never expected of an experienced white gardener, for such is done by the natives—often in a very rough manner; but he is there, it is his home, he is cheap, and he is going to stay there.

Before the war commenced, the rate of wages in Cape Colony for an experienced man was from £6 to £10 per month, with sleeping quarters free, the latter often consisting of one room only to sleep and have one's meals in. But the rate of wages is undoubtedly changed since the war began. The vast number of refugees from the Transvaal and Orange River Colony will certainly bring wages to such a low level that it would barely be enough to live on, and probably work could not be found at even such low wages. Therefore my advice is—do not go to South Africa until the war is past, and the country is in a settled state (unless you have previously secured an appointment), or you will surely regret taking such a step.

On the other hand, if the settler has a capital of at least £150 to £200 to invest, then one could do very well indeed by renting a piece of land on the outskirts of a town where water is available for irrigation purposes, to grow vegetables during the winter months, and at the same time to prepare stocks for Roses, Apples, Pears, Plums, &c., to be grafted or budded in their season. I mention vegetable growing during winter, because that being the dry season, if the grower have the command of water, vegetables can be made to pay extremely well. The most remunerative fruits to grow are Oranges, Apples, Pears, Plums, Apricots, Strawberries, and Grandillas, and as a rule they are very sure crops.

The climate on the coast is all that could be desired, but inland it is somewhat enervating, unless in such places of high elevation as

Queenstown, &c. It is said that King Williamstown is the second hottest town in Cape Colony. This I do not doubt, for when I look through my diary, I find from January 1 to March 31, in 1897, my thermometer registered 112° F., on one occasion, in the shade; thirteen times it showed between 100° F. and 110° F., and twenty-one days between 90° F. and 100° F. All the above temperatures were taken in the shade at 9 A.M., with the exception of the highest, 112° F., which was taken at mid-day. The nights are at times correspondingly hot.

Clothing is an item that should be carefully thought out, or rather, advice should be obtained from one who has been to the Cape. Thick overcoats are only an encumbrance. A thorough good mackintosh is worth all the trouble of taking, as also is a good stock of woollen under-clothing, with two or three suits of thin, strong material. The voyage from Southampton to East London, via Capetown, was one of the happiest holidays I ever spent. It occupied twenty-nine days, and was one continual month of perfect rest. *W. Miles, Isleworth.*

A VISIT TO THE NORTH—II.

(Continued from p. 275.)

IN due course I arrived at the Central Station in the great commercial city of Glasgow. It soon became evident that there existed in Glasgow such a degree of overcrowding that we Londoners seldom experience—unless we happen to be present in Shrewsbury upon the night preceding the opening of their great annual fête. Most of the hotels had an extra man posted at the entrance, with the unpleasant duty of informing all and sundry that they had been "quite full since 12 o'clock noon." That was the general reply one got, and even when rooms had been ordered in advance, there was occasionally some difficulty in getting them. Still, we all had to be good tempered, remembering that but for us individually, the condition of things would have been less acute.

ROTHESAY.

The first place I visited after attending the opening of the exhibition of plants and cut flowers, on August 28, was Rothesay. I started early on the following morning from Glasgow, in company with a renowned Scots gardener living in the South of England, who "knew the ropes" better than I. We proceeded by Caledonian train to Gourock, there being an excellent service to this town in connection with the Clyde boats. At Gourock we went on board the *Columbia*, a boat almost equal to the popular *Lord of the Isles*, which parades the magnificent Clyde, seemingly conscious of its elegance, superiority, and strength. What a blow we got, to be sure, before reaching the beautiful, well-sheltered bay of Rothesay! The ancient capital of Buteshire, and one of the most beloved of Scottish watering-places, possessing no connection with the mainland except by boat, it would appear to be a most unlikely place to find a flourishing nursery business with a world-wide fame; yet there, only a little way from the point where the boat stopped, is Messrs. Dobbie & Sons' nursery; and there are two other nursery businesses adjoining.

We had an appointment with Mr. William Cuthbertson, the head partner in Messrs. Dobbie's firm, whom we found in the offices, which have been made out of part of an old house certainly 150 years old, with walls 3ft. or more through. Mr. Cuthbertson told us that Mr. Dobbie commenced a small business about 1855 in Renfrew, and subsequently removed to

Rothesay. He had always a special preference for Hollyhocks, Pansies, and other hardy florists' flowers, and in his younger days proved himself to be an adept cultivator of Beet, Leeks, and other vegetables. After a pleasant chat with Mr. Cuthbertson upon the beauties and interest of the Island, which is about one-half the size of the Isle of Man, we were shown a house in which a large number of varieties of Tomatos were growing, apparently for comparison. Among these were Golden Nugget, with very "tart" fruits; "All the Year Round," a useful, free-fruited variety, raised by Mr. W. Farr, and distributed by Messrs. J. Veitch & Sons; the finely flavoured Chiswick Peach, and a distinct variety from America with lemon-coloured fruits. We were particularly interested in some varieties resembling the old Currant Tomato. These had racemes of fruit from 2½ ft. to 3 ft. long, each fruit being about the size and colour of a red Cherry. Upon other plants, while the racemes were not quite so long, the fruits were placed closer together upon them. The varieties (for the plants differed considerably from each other) were spoken of as the Gooseberry-Tomato, but this appellation appeared to me less appropriate than "the Cherry-Tomato" would be. When Messrs. Dobbie & Co. distribute these varieties, they will prove to be of great use in certain forms of decoration, including that of the dinner-table.

Messrs. Dobbie raise an enormous stock of Fuchsias and Dahlias each year from cuttings. Of Fuchsias, for instance, we saw thousands, and these cuttings are struck and are out of hand before the great work of raising Dahlias need be commenced. The varieties of Fuchsias are very numerous, and are suitable for bedding, cultivation in pots, or suspending in baskets.

The Dahlias were making a glorious show at the time. Many of those that are cultivated for furnishing large exhibition blooms were growing on a very steep slope facing west, and in company with them were fine breadths of early-flowering Chrysanthemums, which in the climate of Rothesay grow and flower in rare perfection—for there are no early frosts there. The firm does not raise new varieties of Dahlias at Rothesay, indeed, the only Dahlias that have ever been raised in Scotland, have been raised, I believe, by the well-known florist, Mr. M. Campbell, of Blantyre. One of these, *Up-to-Date*, the first he raised, was flowering well upon the slope; it is a large, red-coloured Cactus variety, apparently rather thin in petal, but the petals are numerous. Other novelties noticed were: *Artus*, a first-class new Cactus variety, colour light red; *T. W. Wilkinson* (Cactus), one of the best introductions of last year, colour crimson, shaded with purple, claw-like, of best form; *William Treseder*, a variety raised at Cardiff, white, tinted with pink, of good, erect habit; *Major Tuppenay* (Stredwick), an excellent red-coloured Cactus with yellow centre, the florets having wavy outlines; *Major Weston*, Mrs. J. J. Crowe (C.), of lemon-yellow colour, excellent form, florets beautifully arranged, raised by Mr. West; *Carter Page* (West), a first-rate scarlet-coloured Cactus; and *Fearnot*, a good Cactus variety for the garden, producing rather small flowers in unusual abundance, and the plant a large, bushy head.

If Messrs. Dobbie & Co. do not raise Dahlias, they make it a practice to secure stocks of all good novelties at the earliest moment, and propagate for supply as speedily as possible. Thus, we were informed that there were 90,000 Dahlias potted there last year. In the *Gardeners' Chronicle* for May 11, 1895, p. 585, was reproduced a photograph,

showing the interior of a Dahlia-house at Rothsay in spring, when planted with 10,000 ground roots for producing cuttings.

Violas and Pansies are also specialties of the firm. There is a considerable sale for these in the autumn, consequently propagation is commenced in July, and continued until winter. Many frames had been filled with cuttings already. A very fine white Viola was observed in one, named Lady Roberts.

In the hardy plant nursery, which is a quarter of a mile or so from the offices, there is a very varied stock, about which space will prevent me from writing in detail on the present occasion. Mention may be made, however, of the fine large-flowered Pentstemons (see note on p. 230), and of the grand African Marigolds, Lemon Queen and Prince of Orange, which were growing and flowering perfectly. I say grand, not that they are favourite flowers of my own, but because of their kind they are matchless, and I know how very much appreciated Marigolds are in most Scotch gardens, and what care is bestowed upon them. Breadths of Roses had just been budded, and in addition to all the hardy flowers were seen crops of vegetables.

The surface of the nursery ground is extremely hilly, and one of the highest points has not unfitly been dubbed "Spion Kop."

A very interesting feature in these grounds was a splendid plant of the bright flowered *Tropaeolum speciosum*. There is a little office near to the gate, and about 10 yards length of its wall, 5 feet high, was covered with the beautiful flowers of this plant. A rare sight was this for a Londoner! We visited Mr. Cuthbertson's pretty home upon the highlands, through some charming woods, where a capital view of the bay is afforded; also

TWO OTHER NURSERIES

adjoining to those of Messrs. DORRIS. One of these is Mr. Michael Cuthbertson's, who cultivates a stock of hardy plants. The other is the establishment of Messrs. Alex. Lister & Sons, who cultivate hardy plants, especially Dahlias, Pansies, Violas, and other florist's flowers. Two new Dahlias we saw in this establishment were Mrs. J. Lister (Cactus), scarlet colour; and Lister's Yellow (Cactus). These are good novelties in the respective colours, but will not be distributed until the year 1902.

A most interesting sight in this establishment were two houses full of Tomatos in full bearing, the variety being Lister's Prolific, which was figured in *Gardeners' Chronicle*, January 6, 1900, p. 5. From the crop the plants then bore, my friend and I concluded the variety was the most abundant bearer we had ever seen, and I therefore strongly recommend it to market growers, and other cultivators who require heavy crops. The fruits are of Perfection type, and nearly all of them are of a nice usable size.

We lost no time now in getting to the boat, which was to take us to Wemyss Bay, en route for Ardgowan, P.

(To be continued.)

TRADE NOTICE.

CHRYSANTHEMUM CUTTINGS.—A correspondent complains that in response to an advertisement offering cuttings of the newest varieties of Chrysanthemum, he wrote for some, and after some delay, received a batch of cuttings, with the names of the newest sorts attached; but the novelty was in the names only—the cuttings were of old, well-known sorts.

REMARKABLE GROWTH OF A TOMATO.

THE accompanying ILLUSTRATION (fig. 85) will give a better idea of this extraordinary fruit than any description, though a few words may be said about it as a cross aid to the figure.

The base or under-side of the fruit appears quite normal, but round its greatest circumference, and about half-way from the base, three smaller fruits are formed, meeting in the middle of the mother fruit; upon these other smaller ones grow in varying numbers and sizes, numbering altogether about twenty. At the time of gathering, the basal fruit and the three next largest had assumed the usual red colour of a ripening Tomato, while the smaller or external growths were either green or striped with green. The conditions under which this remarkable fruit grew was in a cottage-garden at Brentford, the plant being one of several purchased from a street vendor by one of the attendants in the Kew museum. Near the Tomato plants some Vegetable-Marrow grew, and a large leaf of the Marrow so covered the flowers and the early

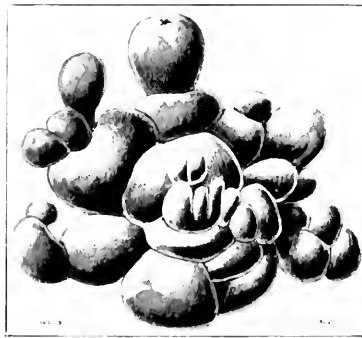


FIG. 85. REMARKABLE GROWN TOMATO.

stages of the fruit of the Tomato, that the owner did not know of its existence until removing the Marrow-leaf one day, he was greatly surprised to find this monstrosity, which was promptly brought to the museum, where it is now preserved. *John R. Jackson.*

WOODHATCH, REIGATE.

THERE is always something worth seeing at this pretty place, so long known as the residence of the late Mr. T. B. Haywood, and now continued as such by that gentleman's widow. For some time there has been a big show of Roses, and in spite of the warmth of the position, and the fact that the soil is an outcrop of the Reigate sand, yet Roses do very well, and if the season be fairly moist, then Mr. Salter can put up some capital flowers. Budding was in progress when I looked into the Rose-garden a week or two since, the stocks being stout and full of growth, and promising to produce very fine blooms next year. A good breadth of the kitchen garden is set apart for Roses, the position being an open one, and giving ample elbow-room. The prospect of a good autumn bloom was not so good as in some previous years, owing to the recent great heat and drought.

A specially great autumn and winter feature here is the collection of Chrysanthemums in pots, and which is this year not only more representative than ever, but of the 1000 plants grown all seem to be of exceptional robustness, and indicate the production of very fine blooms. No doubt, to very many enthusiastic Chrysanthemum growers, Woodhatch will towards the end of October become a species of floral Mecca.

The collection naturally includes most of the best and newest Japanese varieties, and invariably for testing their merits, some of the best of the Australian raiser, Pickett's seedlings. That gentleman is, I believe, just now in this country, and not long since he called at Woodhatch, and expressed his great admiration for the plants there growing. But, besides Japanese, Mr. Salter is a good grower of incurveds, having all the best also of these less popular forms, the Anemones, the Pompons, and singles. All these latter are varieties that require special care to obtain from them good flowers. The plants generally are in 9-inch pots, the soil being made very firm; they are fed by employing weak manure-water, made by putting soot and horse-droppings into coarse bags, and well soaking them in tubs of water; also in adding drainage from stables and cow-sheds.

From early in October until the end of January there is invariably furnished a remarkably fine show of zonal Pelargoniums in full bloom; nowhere are they done better. The plants for this purpose, now in 7-inch pots, are standing outdoors, fully exposed to sun and wind, on an ash floor. They are pinched over occasionally, and, now that the pots are full of roots, they get weak manure-water twice a week. Here are all the very best winter-bloomers in great variety of colours, and when in full bloom they present such a brilliant mass of coloration as cannot be equalled, at that time of the year, for the dimensions of the house in which they are standing, anywhere.

Although the soil is so sandy, Carnations do well; but the beds are annually well prepared for them. There is a fine selection, but the most brilliant of all is that great favourite of the late Mr. Haywood, the deep scarlet Isinglass, of which there is a good stock grown. But without doubt the addition of some well-sweetened clay to the local sand would be good for most things, and Carnations especially.

Lovers of Orchids find at Woodhatch not only a large, but a singularly well-grown collection. Several houses are devoted to them, and in the blooming season they present a splendid show. Mr. Salter has been very successful in crossing and seeding Dendrobiums, and having cleared off one big stock of seedlings has now coming in apparent luxuriant growth other batches from diverse crosses. The natural inference is, that Orchidists at home will now be producing greater abundance of plants than will the importers with, possibly of varieties that do not otherwise exist. The opening of the flowers on this Woodhatch batch will be looked for with much interest.

Out-door fruit is well looked after here, especially in the orchards, where the Apple and Pear trees are mostly grown in bush form; the long, stout branches being spurred, as for corlons. Strawberries, Raspberries and bush-fruits have been very abundant and fine.

A good breadth is devoted to vegetables, and these are well done. Not only is every part very neat, but culture is everywhere good. *A. D.*

HOME CORRESPONDENCE.

MIXING SULPHUR WITH SOIL.—On p. 268, under the heading "Narcissus-bulbs injured," I observe that a correspondent is advised to mix sulphur with the soil when planting. This advice may be good, but I have reason to doubt it. In my garden, about two-thirds of my stock of *Iris reticulata* are destroyed every year by a well known mildew, which reduces the corn to black powder. A few years ago I tried the experiment of dipping the combs, before planting them in autumn, in flowers-of-sulphur. No more sulphur was added than adhered to the netted tunic. About May, being surprised that no growth appeared, I dug them up, and found them to all appearance quite sound, but no attempt at growth had been made at either end. On consulting an experienced gardener, who was also a chemist, he told me that the effect was just what he would have expected. The flowers-of-sulphur generated sulphurous acid in the soil, which paralyses root growth. Since that time I have been careful to keep flowers-of-sulphur away from plants, both above and below ground. C. Wolley Dod, Edge Hall, Malpas.

SQUIRRELS AND LARCH TREES.—In August of 1899 the squirrels spoiled hundreds of trees from 12 to 30 feet high by stripping off the bark all round the stems. Generally, the injury was done at from 3 feet to 8 feet from the top, and in many instances the leading shoot died, thus spoiling the trees for timber. I never lose an opportunity now of making the number of these nimble creatures fewer in this part—the only remedy which will save the trees. E. M., S. Hants.

CARBIDE OF CALCIUM.—In answer to your enquiry, does your correspondent want to know about the action on plants of carbide of calcium, or of the deposit carbide of calcium leaves after being used for making acetylene gas? If it is the former, I can say nothing about it. The carbide is much too precious for lighting to be used in the garden. If the deposit is used fresh, it burns plants to death; but if it is exposed for some time to the action of rain, it can be used for lime-loving plants; at least, I have used it for various alpinæ without apparent injury, whereas fresh deposit killed Strawberry-plants which I mulched with it. A. K. Bailey, Neston, Cheshire.

APPLE ALLINGTON PIPPIN.—This excellent new Apple was last year in fine form in the Earl of Derby's gardens at Knowsley, where Mr. Doe has it planted somewhat extensively as bushes and on walls. No matter the position, the bushes and trees are carrying heavy crops of beautifully-formed fruits. South Lancashire has a great variety of soils, but wherever I have observed trees of Allington Pippin they are doing well, and on that account it should be brought to the notice of intending purchasers. X.

AN ENORMOUS MUSHROOM.—I found a huge Mushroom of the true edible kind on Sept. 26. The flesh was as pink as if grown in one night. It weighed 1½ oz., and measured 2 ft. 9 ins. in circumference. This is the largest specimen that has come under my notice. W. Humphries, Holme Lucy Gardens, Hereford.

SILVER-LEAF IN PEACHES.—I can fully endorse Mr. Easter's treatment (see p. 220) for the above disease, having practised similar measures to eradicate this disease with good results here. It appeared on several trees in a late Peach-house three years since, and I had all the affected leaves removed, and applied heavy doses of diluted manure-water obtained from the cow-stalls throughout the season; and after the winter-pruning, cleansing and tying in of the trees, the borders were lightly sprinkled over with a digging-fork, and a good dressing of unslaked lime applied, and well watered into the tree-roots. These measures have been carried out here during the past three seasons, with the result that the trees are again restored to their original

good health. Our soil here is very light-
resting on sharp sand, so that all feeding prop-
erties in the soil soon pass away out of reach
of the tree-roots. In my opinion, this disease
is the result of constant heavy cropping, and
want of suitable constituents in the soil. An
annual dressing of lime to the borders is a
necessity in light, sandy soils; and in practice
I find the liquid from cow-sheds most suitable
to the requirements of the trees. E. Ward,
gr., Longford Hall, Streetford, Manchester.

RENOVATING OLD FRUIT TREES.—The present
time is very suitable for grubbing up worth-
less trees and varieties; most gardens have
some, especially on walls. It is sometimes
not an easy matter for the gardener to make
up his mind about such matters. I have come
to the conclusion it is a waste of space and
time to try and rejuvenate or improve such
trees, and I would advise all gardeners to
grub them up, and plant young trees of ap-
proved varieties. Usually the fruit obtained
from old trees is inferior to that produced by
young ones. If possible, when planting, the
new tree should not stand exactly where the
old one grew; but if this cannot be avoided,
then remove every bit of the roots of the old
tree, and make holes quite 16 inches deep, and
26 inches square, and fill up with fresh soil,
so that the young tree may have a good start.
When young trees grow fruit well from the begin-
ning, the trees are kept growing in moderation;
if not, then rank growth ensues, and partial
lifting of the roots and cutting every other
year must be practised. A. J. Long.

FRUIT TREES—ESPALIERS versus PYRAMIDS.
—There has of late years been a great demand
for pyramid and bush-shaped Apples, Pears,
and Plum-trees, the espalier not being con-
sidered so profitable a kind of tree as in the
old days. I think when we take into considera-
tion the amount of ground a good-sized pyra-
mid tree covers, and recollect that very little
can be grown near the tree for a good space
all round at the same time; in the case of
espaliers we can crop quite close, as there is
plenty of light, the gain is on the side of the
latter. I have seen as good and heavy a
crop from an espalier as from a pyramid, and
if appearance counts for anything, I consider
a fruit-garden planted with espaliers looks
better than one with pyramids. A. J. Long.

UNTIMELY FLOWERING OF AN APPLE-TREE.—
A small Apple-tree (Lord Grosvenor), moved
rather late in the spring, in due time bloomed
very freely, but only four Apples developed.
In time it bloomed again, and about a dozen
Apples have set, and are now of an appreciable
size. It now has several clumps of fruit of a
third blooming, while other buds are showing
about to burst, so that there have been two
successive crops and a third blossoming all at
one time on the tree. Is not this unusual, and
will the tree suffer by exhaustion? If so, what is
the remedy? I treated it in the early summer
with a dressing of manure, No. 22, J. M. H.
[The tree will doubtless assume its proper
growth in the spring; and as much of that
made this year will be immature, the leading
shoots should be cut back to fairly ripe wood,
and the weak thin shoots removed entirely.
The Apple will not bear the same amount of
cutting back of the stronger lateral shoots as
the Pear, so that these may merely be
moderately thinned out, cutting them back to
short snags, which will in 1902 make some
flower-buds, and bear fruit in 1903. So much
fruiting as has occurred this year will, to-
gether with the transplanting in the spring,
have given a great check to growth, and the
tree in consequence will not show much bloom,
if any, next year. Ed.]

GRAPE LADY HUTT.—In the *Gardeners'*
Chronicle for September 4, p. 231, appeared a
note upon Grapes Lady Hutt and Diamond
Jubilee. I have grown the variety Lady Hutt
for some years, and consider it to be one of
the finest white Grapes we have for winter use.
I am surprised it is not grown more exten-
sively. My employer appreciates this Grape

more than all others at Christmas. I cannot,
however, agree with your correspondent, that
Diamond Jubilee is so like Black Maroc. I con-
sider it one of the earliest Grapes in cul-
tivation. Planted in a house with Black
Hamburgh, I am confident it will commence
colouring ten days before the old variety.
The flavour is first-rate when properly ripened,
and the appearance is grand. I believe it will
be the Grape of the future for market purposes,
as it can be grown and coloured without much
expenditure in fuel. A. Kirk, Norwood Gardens,
Alton, N.B.

PEAR FORELLE.—Where the soil is suitable
for the Trout Pear, and a good position can be
afforded it on a wall, it is excellent in flavour
and appearance. Some good examples are
growing on a wall in Earl Fortescue's garden
at Castle Hill, Devonshire. In gardens where
this Pear cannot be grown successfully outside,
it is well worthy of a place in the orchard-
house, for its handsome high-coloured fruits
of good flavour. Paul T. More.

EXCESSIVE HEAT FOR VINES.—I have ever
been wont to visit gardens and gardeners from
the Tyne to the Bourne. Some time ago I
visited a garden where the Vines were in the
best possible condition, and Grapes from them
won 1st prizes at the metropolitan shows. The
place subsequently changed hands, a new gar-
dener was appointed, and in less than two
years the Vines needed to be cleared out as
worthless. All this was caused by using ex-
cessive fire-heat. The Vines were pushed on
in the spring, not so much to get ripe Grapes
at a given time, but because it was thought to
be an all-powerful agency in producing good
Grapes. I remember passing through a vine-
yard in a district where coals were plentiful and
cheap. The Vines were Muscats, just in
bloom, in the month of March. It was a cold
night, and the temperature within the house
was 72°. A bad set followed, and I venture to
say that those Vines would have been better
provided for had the temperature been 10°
lower. X.

SOCIETIES.

YORKSHIRE FUNGUS FORAY.

The mycological section of the Yorkshire Naturalists' Union held their annual Foray, extending over six days, dating from September 21, at Cadeby, a village situated some 5 miles from Doncaster. The two most pronounced features of the district are, Conisburgh Castle, alluded to in glowing terms in Sir Walter Scott's *Trevelyan*; and the celebrated Bealgrain Colliery. The district is well wooded, and the woods are mostly of the type beloved by the mycologist—low lying, consequently humid, not too much undergrowth, a large amount of humus, and a plentiful supply of decayed fallen timber. The primary object of the foray was the investigation of microscopic forms, and of the fungi causing plant diseases; consequently the comparative absence of the larger fungi, owing to the protracted drought, did not interfere with the principal object, as is customary on such occasions. On Saturday there was a great unpacking of trunks, books, microscopes (four in number, and all used, reagents, tubes containing spirits for the preservation of material for future study, &c.

The daily routine was as follows:—Microscopic work from 7 to 8.30 A.M., then breakfast and preparation for the day's ramble commencing at 10; home again as soon as sufficient material had been collected to occupy the remainder of the day and the following morning; dinner at 6.30, followed by half an hour for frivolities generally; then microscopic work again, tempered with smoking, and the amount of stimulant—taken as a medicine considered necessary to counteract any possible chill contracted during the ramble.

Two papers, illustrated by about eighty coloured diagrams, were read, one dealing with fungi causing plant diseases, the other with coprophilous fungi. Numerous coloured figures of Yorkshire fungi were exhibited by Mr. C. Cross-land, secretary and sheet-anchor of the mycological section, and by Mr. T. GRASS, of Sheffield.

Mr. A. CLARKE, of Huddersfield, exhibited a new series of stereo-photographs of fungi, which, if possible, excelled his previous productions in this direction. I have often wondered why this beautiful series of photographs of fungi, numbering several hundreds,

and illustrating all phases of fungal life, prepared for stereo and lantern work, could not be utilized for illustrating plant diseases, systematic work, &c., generally, being more of a photographic art, and prepared by a microscopist, hence illustrating the peculiarities of each species to the greatest advantage.

The journal business of the magazine as from occupied exactly seven minutes, and was completed in the gloaming.

Close upon two species of fungi were collected, including some very novel and interesting forms. A being new to the European Flora may be mentioned *Puccinia leporina* K. and T., growing on rabbit droppings, previously recorded from the United States. *Sclerotium leporis* Oud., new to Britain. *Ascochium scutellae* Mass. and Salm., previously found at Kew, but not yet described, also a new species of *Sphaeria* found.

Among *Ascomycetes*, several interesting species were collected. A somewhat important discovery, from a geographical standpoint, was the finding of several good specimens of *Ascochium lepori* Mass., a leaf-fungus with distinctly green gills, and spores. This species has since been found in Holland, as by the Rev. W. J. W. Lye, after whose it was named, and is the only known European representative of the *Ascochium*, a section of *Ascomycetes*, characterized by producing clear green spores. The headquarters of this section is in the New World where, among others, *Ascochium leporioides* Mass. is a most esteemed edible fungus, having a cap of several inches across, present in Britain, &c., &c.

The dead body of a hedgehog was found bearing numerous beautiful specimens of *Trochilium lepori* cephalum, Fr.

Two beautiful specimens of our largest, and probably rarest species of *Mycena*, *M. Berkeleyi* Mass., were collected.

The rare *Lepiota bicolor* B. and B. was present in abundance. As stated by Berkeley, the fruiting body emits a strong smell, to which the name *M. M.* is an interesting object in one bearing on plant diseases were seen.

Most of the *Yew* trees in the district were attacked by *Sphaeria taxii*, Cooke. Microscopic examination shows that the spores of this species are distinct from those of *Sphaeria taxii*, but resemble *Sphaeria Sphaerulata* Cooke.

Polytrichum bellinense, Fr., had pleased to have its large numbers of *Barely* trees, and on the occurrence of this fungus, were found in abundance on the pear tree, or "lesser leaf," *Hypomyces ciliatus*, T. and H., on *Juniperus communis*, Scop.

Almost every living leaf of a large patch of grass at Key showed several dark white blotches, one of the *Juniperus communis*, Scop.

Various members of the *Prunus* group were seen in evidence. Finally, one feature considered of importance may be mentioned. During the week of the annual harvest, some laborers at home were invariably selected as headquarters. This applied, a single, much time was spent in driving of what was worked away from the collecting ground. Furthermore, having preference has clearly been given to the garden, and the social and working element is not conducted by the comfort of other parties, consequently for several years past, some village situated close to the working ground has been selected as headquarters. We had no difficulty in securing a good working room and a general living room, where all their work is done, for night, although they have no separate accommodation in the village. In the matter of facilities for uninterrupted work, cleanliness, good cooking, general expense, &c., this mode of life during harvest times is an ideal one. Of our visits might be expected, minor drawbacks are experienced, for instance, a badly happened to be one of the three village cottages, in which an air of considerable stinging smell, and a heavy fog, and some other things, attended. Next year the party will be held in the Wiltshire district, *Co. Mayo*.

*5 For Crystal Palace and other Shows, see Supplement.

MARKETS.

COVENT GARDEN, OCTOBER 10.

Table with 2 columns: CUT FLOWERS, &c. and AVERAGE WHOLESALE PRICES. Lists items like Asparagus Fern, Carnations, and various flowers with their respective prices.

PLAINS IN POIS. AVERAGE WHOLESALE PRICES.

Table with 2 columns: PLAINS IN POIS and AVERAGE WHOLESALE PRICES. Lists items like Adiantum, Arabis, and various plants with their prices.

FIELD AVERAGE WHOLESALE PRICES.

Table with 2 columns: FIELD AVERAGE WHOLESALE PRICES. Lists items like Apples, home grown, and various field crops with their prices.

VEGETABLES. AVERAGE WHOLESALE PRICES.

Table with 2 columns: VEGETABLES and AVERAGE WHOLESALE PRICES. Lists items like Artichokes, Beans, and various vegetables with their prices.

SEEDS.

LONDON, October 9. SEEDS. Various seeds, see by Mr. John Bath, 23 & 24, Wellington Street, Covent Garden.

FRUITS AND VEGETABLES.

GRAPEWINE, October 9. Average prices of the market... Various fruits and vegetables listed with their market prices.

CORN.

AVERAGE PRICES OF BRITISH CORN per imperial bushel for the week ending Oct. 5, and for the corresponding period of 1899, together with the difference in the quotation. The figures are based on the Official Weekly Return.

Table with 5 columns: Description, 1899, 1900, Difference. Lists various types of corn and their prices for 1899 and 1900, along with the difference.

ANSWERS TO CORRESPONDENTS.

ARBUS SPERMIS: Correspondent. We regret we cannot read the real signature. The blistering is not quite the same as that caused by the *Coccus*-like insect on *A. annulata* and other silver-firs, but it led us to the inference that the blister, with which we are quite familiar, might be due to a similar cause. There was no trace of fungus on the leaves. Most likely there is some correlation between the occurrence of the blisters and the death of the leaves, but we could not trace it.

FRIGATA: Work-up. We see neither fungus nor insect. The appearances are due to some fault in management too much or too little water, cold draughts, sunburn, and so forth.

CORUS WIDGELIANA TURNING YELLOW IN THE LEAVES: W. Hesketh. The plants have doubtless suffered from the low temperature to which they were so long exposed. You may, in the spring, afford the plants bottom heat of 80°. But we cannot promise you very good results; the yellow leaves will die, and new growth take its place, and all that will take several years.

COLLEGE: L. R. W. We cannot speak from personal experience. Our preference would be for Reading. A great deal depends on circumstances, which you must know much better than we do.

DISCOLORED CHEYENNAH MUSE: W. B. The brown discoloration is caused by a check to growth.

EXPENSES INCURRED IN GOING TO A SELECTION: Henri. These are matters of agreement between master and man previously to going to the place. We do not think you can claim expenses, although it is customary to allow them.

FIBRAL GUM: J. Swellin. It is kept by some of the florists and horticultural sundries-men.

FELICITAS AND ARMA SERRATA: R. R. The work probably of weevils or cockroaches. Watch the plants at night, the deprecator being doubtless a night-feeder.

FENESTRA: E. Y. The giant puff-ball, *Lycoperdon giganteum*. So long as the flesh remains snow-white, it is excellent to eat in thin slices and fried. If it has changed colour you must not eat it. J. W. The Champignon, *Agaricus vesiculosus*, edible.

GARLIC: FRAMAS AND WOODCOTE: F. Webber. Set traps of flower-pots stuffed with damp

day, and clear them out every morning. Pour boiling water round the sides of the frames day by day, and keep the interiors free of rubbish.

GRAPES: H. Hollett. It is quite impossible to name the varieties sent from a few berries of each.—*D. M., Reventre.* Spotted by a fungus (*Gloeosporium*).

IRLAND POPPIES AND PETUNIAS: J. L. & Sons. Both are perennial plants, but the gardener often treats them as annuals, raising them fairly true from seeds.

INSECTS: Constant Reader. The giant saw-fly, *Sirex gigas*.

MUSCAT G. V.: D. M. The Grapes seem to have been exposed to some deleterious fumes or washes, probably the sulphur which was put on the hot-water-pipes is responsible for it, or fumigation when the berries and foliage were moist.

*. NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTICE: We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such demands generally involve some inconvenience, and a large expenditure both of time and money on our part. Correspondents not ascertained in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: H. G. W. Your fruits appear to be distorted examples of *Beurre Clairgeau*; but why send such specimens!—*S. R.* 1, *Nonpareil*; 2, *Beauty of Kent*, not in its best condition; 3, *Lemon Pippin*.—*E. S. A. Diamond*; *B.*, past recognition.—*W. B. J.* Please be good enough to read the conditions under which we endeavour to oblige correspondents in the naming of fruits. The locality from which the specimens are sent should always be mentioned.—*J. H. L.* 1, *New Northern Greening*; 2, *Sucrée Verte*. The Plums were over-ripe, and not securely packed, hence they arrived in a condition that defied our powers of determination.—*W. R. R.* *Beurre Benoit*.—*A. S.* *Golden Spire*.—*G. N. S.* *Calville Rouge d'iver*. *W. J. S.* You have exceeded the number of specimens allowed, but we will endeavour to deal with them in two instalments. Those who conform to the rules must, however, have first attention.—*G. C.* 1, *Pear Colmar d'Été* (see reply to *A. P.*); 2, quite rotten; 3, *Worcester Pearmain*; 4, *Duchess Favourite*; 5, *Ribston Pearmain*.—*J. P.* *Colmar d'Été*, a somewhat variable Pear, but under favourable conditions a useful and richly flavoured variety.—*T. K.* 1, *Passé Pomme d'Automne*; 2, *Golden Duet*. Are you serious about No. 3, or is it a little piece of plesantry? If the fruit sent (about 1 inch in diameter, and deformed) be a typical example, we should hope it never had, and never will have, a name to distinguish it.—*A. McA.* Your Apple is Irish *Reinette*, a favourite in some of the north-western counties of England and on the borders of Scotland.

NAMES OF PLANTS: E. N. *Trospernum Dalechampii* (S. Europe).—*F. E. L.* *Eleagnus pungens*, golden-variegated form.—*Mrs. H. S.* *Crataegus coccinea*.—*Inversider.* Common *Teasel*, *Dipsacus sylvestris*.—*G. S.* *Enonymus latifolius*.—*Alpha.* 1, *Helianthus decapetalus*; 2, *Pyrethrum*, we believe from the Canary Islands; 3, *Pyrethrum fruticosum*, Paris Daisy.—*W. S.* *Sequoia sempervirens*, the Californian Redwood.—*C. J. P.* 1, *Koeleria paniculata*; 2, *Phillyrea angustifolia*.—*D. B.* "Name not for publication." We should not be surprised if you felt ashamed to occupy our time with such wretched specimens so badly packed. The labels are detached, but we can see that one is *Physianthus albens*; the other is an *Acanthaceae* plant, which we cannot waste our time in endeavouring to determine.—*T. W. R.* *Crataegus monogyna*, *Alnus glutinosa*.—*G. H.* *Cornwall*. 1, *Cyperus laxus*; 2, *Salvia coccinea*; 3, *Arctotis arborescens*; 4, *Erigeron mucronatus*; 5, *Alyssum maritimum*; 6, *A. m. variegatum*.—*L. S.* 1, *Aster*

Novi Belgii; 2, *A. Amellus*. We cannot name varieties of *Clematis*.—*G. H.* *Salvia hornumina*.—*Young Reader.* 1, *Fuchsia corymbiflora*; 2, *Swainsonia galegifolia alba*; 3, *Justitia carnea* of gardens; 4, *Anthericum lineare variegatum*; 5, *Begonia Diezwilliana*; 6, *B. maculata* variety.—*T. M. C.* *Schomburgkia Lyonsii*.—*Alpha.* The two white buckwheat like varieties of *Chrysanthemum frutescens*.—*Bonter.* 1, *Rhus typhina*; 2, *Quercus rubra*; 3, *Acer platanoides* variety.—*H. W.* 1, *Polygonum*; 2, *Spiraea Douglasii*; 3, *S. Anthony Waterer*, if of dwarf habit; 4, *Senecio pulcher*; 5, *Diplazium glutinosus*; 6, *Pellionia Davauana*.—*W. H. G.* *Xanthocheas sorbifolia*.—*R.* *Dendrobium aduncum*; *Pear* shortly.—*Morgate, France.* 1, *Cotyledon umbilicus*; 2, *Glaucium luteum*; 3, *Anagallis tenella*.—*G. P.* 1, *Aster damosus elegans*; 2, *A. Novi Belgii*; 3, *A. panicus albus*; 4, *A. Nova Anglie pulchella*; 5, *A. cricoides densiflora*; 6, *A. Novi Belgi Robert Parker*.—*H. B.* 1, *Abelia chinensis*; 2, *Ficus*, material insufficient for specific determination; 3, *Selaginella cuspidata*; 4, *S. plumosa*.

NAMING OF FRUITS AND PLANTS: E. R. A. B.

If pieces of plants—good material, with flowers, if flowering plants, not more than six, and sound, mature, not over-ripe fruits to the same number, are sent, we undertake to name them when it is convenient to us so to do, but we cannot put other work on one side. We are willing to do this gratis, supposing you are a subscriber to the paper; and any small sum sent per P.O. or otherwise as an acknowledgment of our services is devoted to one or other of the gardening charities as the sender may designate. Kindly read the notices in our "Notices to Correspondents" column.

NOTICE TO LEAVE EMPLOYMENT: J. C. In the absence of an agreement, unless you have misconducted yourself, you are entitled to one month's notice, or wages and lodging-money if you live on the premises rent free; also the value of allowances, as, for instance, coal, vegetables, light, &c., in lieu thereof. You can sue the new tenant in the county court.

PEAR: H. E. H. B. *Pitaston Duchess*, obtained by Mr. Williams, of Pitaston, Herefordshire, many years ago, by crossing *Duchesse d'Angoulême* with *Gloat Morceau*. A fine-looking fruit, but not so good in quality as either of its parents; it being seldom first-rate. *Boycenné du Conice*, which is ripe at the same season, is a much superior Pear.

PEAR ROTTING IN CENTRE: H. V. W. A fungus, *Monilia tructigena*, the brown-rot of Apples and Pears, entrance of the spores being obtained at the eye.

PHOSPHORIC ACID AND POTASH: A Constant Reader. If applied in large quantities, as, for example, in the form of Peruvian guano and mineral phosphates, there would be an excess of phosphoric acid on the soil for a time, and plants would be injured or killed. Nitrogenous manures (guano) contain a considerable quantity of phosphoric acid in a soluble form, as ammonium phosphate. Bolivian guano is a non-nitrogenous sort. If potash exists in a soil, and a nitrogenous manure, as Peruvian guano be applied, the soil will then possess every fertilising property in a high degree; but if the land is poor in potash, the guano alone will not do much good, and the crops will be unremunerative.—Potatos all haulm. Cereals all straw, beans the same, and Turnips no bulb. As a rule, what is insoluble cannot be taken up by the plants, and is therefore neither harmful nor the reverse. The percentage of potash in most soils is about 2 per cent., and as most crops remove several pounds per acre, it is therefore necessary to afford dressings of this manure annually, not solely, but as an auxiliary. You might employ kainit or Norwegian fish potash guano.

PROLIFEROUS PEARS: J. K. In some seasons growths like that figured at fig. 86 are very common, but always attract attention. The edible portion of a Pear, as botanists know, is not the fruit at all, but the dilated end of



FIG. 86.—A PROLIFEROUS PEAR.

the flower-stalk, in which the true fruit, or core, is embedded. In these prolific Pears, for some reason or other, the swollen branch, after temporary arrest, has started into growth, and produced other swollen branches, with leaves proceeding from them.

ROOT FUNGUS: M. T. M. Probably the spawn of some *Agaric*. Something might be done by removing as much of the soil as possible and adding fresh. We fear, however, that the case is hopeless.

TO DRY AND PRESS FERN FRONDS: T. S. Lay the fronds, carefully spread out, between sheets of absorbent paper under slight pressure, and change the paper every third day till the fronds are dried. They may then be fastened on to sheets of herbinum paper, and secured with strips of postage-stamp selvage, or strips of gummed paper. If you must colour them green, you should first bleach them after drying in a weak solution of sulphuric acid and water; and then, when again dried, dye them of the proper colour, and when dry place them in the herbarium. The chief materials in dyeing Ferns are malachite green and picric acid in varying proportions, according as the tint is dark, light, or medium green.

TOMATO-SEED: W. R. On superficial inspection, the seeds appear healthy.

VIOLETS: J. C. We are still of the opinion that the soil was richer than is necessary for *Viole* s. The plants sent for our inspection were robust, and capable of flowering abundantly in cold frames.

WATER THYME: H. A. R. What Walton meant was probably the Water-moss, *Fontinalis antipyretica*. Nowadays, the name is sometimes given to the troublesome Canadian water-weed, *Elodea canadensis*, which has been introduced within our own times.

COMMUNICATIONS RECEIVED.—B. Middleburgh, M. Brittany.—*B.* Japan.—*P.* Guatemala.—*Rodriguez.* Brazil.—*H. W.* Caylon.—*J. D. C.* Baltimore, U.S.A.—*W. L. M.* Texas.—*F. De L.* Antwerp.—*J. T.* Grahamstown, S. Africa.—*B.* Tasmania.—*K.* Brussels.—*A. B.* Ventnigla.—*Kurt Dinter.* German S.W. Africa.—*J. V.* Paris.—*W. R.* H. S.—*E. M.* H.—*J. C.* H.—*H. B.* PRO.—*F. M.* H.—*F. A.* D.—*G.* J.—*B.* Percy Station Co.—*A. S.* W.—*B. W.* J.—*G.* E.—*M.* H.—*W. A.* H.—*R. J. K.* L.—*C.* A.—*C. F.* J.—*O. B.* A.—*Curtis.* R. M.—*H. M.* E.—*S.* E.—*Essex.* A.—*H.* A.—*Sussex.* Natal.—*Quincy.* T. W.—*H. J.* C.—*L. E.* S.—*E. Moore.* J.—*A. G.* B.—*R. G.* A.—*James.* C.—*L. D.* J.—*H. L.* H.—*P. K.* North Carolina.—*M. Lemone.* Nancy.—*W. E. R.* Granada.—*Hart.* Trinidad.—*W. J. C.* A.—*H. S.* G.—*W. T. W.*—*Wyck & Co.*—*W. J. B.* W.—*H. C.* D.—*R. W.*—*Show & Son.*—*G.* S.—*28.* for Orphan Fund, plants next week.—*W. S. P.* G.—*L.*

EXHIBITION OF BRITISH-GROWN FRUITS AT THE CRYSTAL PALACE.

(OCTOBER 10, 11, 12, 1901.)

The Annual Show of British-grown fruits by the Royal Horticultural Society in the Crystal Palace, which was opened on Thursday, was highly satisfactory, although it may have been rather less in extent than was that of last year, when hardy fruits were so unusually good and numerous. The entries in Division I, for instance, were sixty this year, as compared with seventy-eight last year, and although the other Divisions may not have shown so much falling off, there was the same tendency in all of them, excepting Division II, which was exclusively for nurserymen. In this Division the number of entries this year was sixteen, against eleven last year, and some of these displays were large, and embraced much variety.

The President of the Society, Sir Trevor Lawrence, Bart., who has usually been present at these shows, was detained by business in connection with St. Bartholomew's Hospital. A letter was read from him, which said that Thursday was a regular day for a meeting of the Governors, and as the particular business for Thursday last involved an expenditure of £300,000, he judged it to be his duty to attend at the Hospital. Nevertheless, the letter expressed deep regret that Sir Trevor could not be at the Crystal Palace. In his absence the chair was filled by the Secretary, the Rev. W. Wilks, M.A., and there was a good company.

One of the most interesting toasts was that of "The Visitors," coupled with the name of Mr. Robt. Fenn.

The CHAIRMAN expressed very great pleasure in having Mr. Robert Fenn present, and said that it was he who first commenced the improvement of the Potato by means of cross-fertilisation. If the Potato had been improved during the past fifty, sixty, or seventy years, it was certainly due to the energy, skill, and foresight of Mr. Fenn. After deprecating the "ball of flour" kind of Potato, now popular with many people, the Chairman said he much preferred a good smooth, waxy, rich-flavoured, yellow Potato, and he was glad to hear from Mr. Fenn that that gentleman's latest efforts had been directed to the production of Potatoes of this type. Mr. Fenn, who is eighty-four years of age, and who is said to be the oldest living Fellow of the Royal Horticultural Society, having been elected a Fellow in 1855, made a very interesting speech, which unfortunately was not audible to all present. He described his first experiences in respect to cross-fertilising the flowers of the Potato, and gave considerable information upon the subject of improving Potatoes generally.

In connection with the toasts of the judges and exhibitors, short speeches were made in response by Mr. ASSBEE, agent to the Duke of Bedford, in Covent Garden; and by Mr. W. H. DIVERS, gr. to the Duke of Rutland, Belvoir Castle, Grantham. Mr. ASSBEE said that the work of the judges had been difficult, because the quality of the exhibits had been high, rather than because exhibits had been unusually numerous. The judges had thought it necessary to appeal to the referees on more than one occasion, and he (Mr. Assbee) had never attended an exhibition where the need for referees had been more clearly felt. Mr. Divers said that he had had experience of Crystal Palace fruit shows for the past sixteen years. He was glad to say that there had been a great improvement in the cultivation of fruits during that period, and the Royal

Horticultural Society was entitled to much credit for this. He also noticed that fruits were more correctly named when exhibited, and there were fewer mixed dishes of fruits shown than formerly.

The Chairman made a very hearty acknowledgement of the services rendered by Mr. S. T. Wright, and this was evidently very warmly supported by the Fellows present.

DIVISION I.

FRUITS GROWN UNDER GLASS OR OTHERWISE (Nurserymen and Amateurs only.)

CATEGORIES OF FRUIT

Collectors of some dishes, a Judoka or Dutch Apple.
 The 1st prize was given to the Earl of Harrington, Elvaston Castle, Belper, gr. Mr. J. H. Goodacre. This was a very superior exhibit and consisted of Madresfield Court Grapes, having large berries and perfect finish, and Miss of Alexandria Grapes, the bunches being large, and the berries medium-sized and nicely even, and the fruit being well ripened, and perfect in every particular. Berries medium, admirably large yellow-skinned, spotted with very fine Princess of Wales, and Golden Eagle Peaches, Large Victoria Nectarines, Cox's Orange Pippin Apples, and Margaret's Mill, all of Paris, in large and without blemish. The 2nd prize in this class was awarded to Mrs. G. M. Allen, of Southsea, Esplanade, Lido, gr. Mr. G. M. Allen. The exhibit consisted of a variety of apples, all in the same lot, including the following:—size of fruit, and colour, and shown in perfect condition. A good fruit of Melon The Countess, barely ripe, very fine Princess of Wales, and Golden Eagle Peaches, Apples of Cox's Orange and Red and Ribston Pippins, Princess of Wales Peaches, and Golden Eagle Peaches, all of good quality. To Mr. S. WAINMAN, LAYTON, Southland Lodge, West Lodge, Watney, gr. Mr. J. Cook. In this exhibit the three bunches of Alnwick Seedling Grapes were followed by a very good lot of berry. Miss of Alexandria, and a very good lot of good quality. The 3rd prize was awarded to the Duke of Devonshire, Devonshire House, London, gr. Mr. J. H. Goodacre. The exhibit consisted of a variety of apples, all in the same lot, including the following:—size of fruit, and colour, and shown in perfect condition. A good fruit of Melon The Countess, barely ripe, very fine Princess of Wales, and Golden Eagle Peaches, Apples of Cox's Orange and Red and Ribston Pippins, Princess of Wales Peaches, and Golden Eagle Peaches, all of good quality. To Mr. S. WAINMAN, LAYTON, Southland Lodge, West Lodge, Watney, gr. Mr. J. Cook. In this exhibit the three bunches of Alnwick Seedling Grapes were followed by a very good lot of berry. Miss of Alexandria, and a very good lot of good quality.

The Earl of ASHBOURNE, Ashbourne Place, Leicestershire, gr. Mr. C. B. BAKER, Esq., Tewkesbury Lodge, Forest Hill, gr. Mr. W. Taylor, and were notable for size and quality, 2nd, J. W. FLEMING, Esq., Chisworth Manor, Ramsey, gr. Mr. W. Mitchell; and 3rd, the Earl of HARRINGTON, gr. Mr. J. H. Goodacre.

Miss Fenn's three bunches. There were four entries in this class, but only two turned up, and the best exhibit was from J. W. FLEMING, Esq., who had four bunches of good weight, and the berries finely coloured, being similar to the Bannons in this respect. 2nd, Captain FORTSMAN, who had also very bunches of rather less colour.

Black Cherries. Out of nine entries made in the class for this well-known grape, only four collections were placed on the exhibition table. It was a superb exhibit from Lord HASTINGS that won 1st prize, the bunches were heavy, and berries nicely coloured, and of good weight, while the shoulders were characteristic of this variety, were fairly well developed. J. W. FLEMING, Esq., followed with bunches equally good in berry, and rather better in point of bloom; but the bunches were less heavy. 2nd, Sir CHARLES RUSSELL, Bart. The heavy bunches in this were replaced, as they lacked good form and finish.

Lady Diana's three bunches. There were seven exhibits in this class against five entries last year. The 1st prize was awarded to GEORGE A. RICHARD, Esq., the Earl, Engleford Green, gr. Mr. H. B. Brown; these bunches were long, and the berries splendidly coloured, but they were nicely appeared, and of slight weight for want of more severe finishing. J. W. FLEMING, Esq., followed, but his grapes were very much inferior in most respects, though they did not lack good finish.

Any other Black Grape. There were only three exhibits in this class, and the 1st prize was splendidly won by Lord HASTINGS with magnificent bunches of Alnwick Seedling; these were very heavy and of good form, while the berries were large and perfectly coloured; but the bunches were very heavy and of good form, while the berries were large and perfectly coloured; but the bunches were very heavy and of good form, while the berries were large and perfectly coloured; but the bunches were very heavy and of good form, while the berries were large and perfectly coloured.

posed of six varieties, three bunches of each. There were only two competitors last year, and this year Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Belper, who, on two preceding occasions won first prize, was allowed a walk-over, and consequently the Cup has become his own property. The varieties included in his collection were Madresfield Court, bunches of moderate size, berries large and moderately well coloured; Black Hamburg of rather moderate quality, as the berries lacked in finish; Barbarossa, very large bunches, especially one of them; Miss of Alexandria, good; Gros Maron, moderate-sized bunches, and good berries in size and colour; and Black Alicante of fair weight and colour.

Three distinct varieties, three bunches of each.—There were four entries in this class, as was the case last year. The 1st prize was won by Lord HASTINGS, clever Vine-grower, Mr. W. Simms, Melton Constable Hall, Norfolk. His Gros Colman were magnificent in size of berries; we have seen the variety shown with deeper colour, but never larger in berry. Black Alicante with large bunches, and superbly coloured, but the berries were rather small; and Alnwick Seedling, of grand colour, but moderate in weight and size of berry. 2nd, Captain FORTSMAN, Battle Abbey, Sussex, gr. Mr. W. Cannon. The varieties staged by this exhibitor were Miss Prince, in good condition for this rather shy-colouring variety. Miss of Alexandria, of very rich colour, moderate weight, and Black Alicante, very satisfactory, the berries being much larger than those of the same variety staged in the 1st prize collection. Sir CHAS. RUSSELL, Bart., Swallowfield Park, Reading, gr. Mr. F. Coles, was 3rd, and showed Miss of Alexandria, Black Alicante, and Foster's Seedling, the last named variety being more remarkable for rich colour and finish than size of berries.

Black Hamburgh, three bunches. The best exhibit of this variety came from C. BAKER, Esq., Tewkesbury Lodge, Forest Hill, gr. Mr. W. Taylor, and were notable for size and quality, 2nd, J. W. FLEMING, Esq., Chisworth Manor, Ramsey, gr. Mr. W. Mitchell; and 3rd, the Earl of HARRINGTON, gr. Mr. J. H. Goodacre.

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Miss of Alexandria, three bunches. Five collections were placed in this class, and generally the grapes were of very good quality. Sir CHAS. RUSSELL, Bart., won 1st prize, the Earl of HARRINGTON 2nd prize, and Lord HASTINGS, with bunches of extra good colour and bloom, was placed 3rd.

Any other White Grape.—Only three exhibitors competed here. The variety gaining 1st prize was Chasselas Napoleon, of satisfactory quality and weight, from the Earl of HARRINGTON; 2nd, richly coloured Foster's Seedling, from Sir CHAS. RUSSELL, Bart.; and 3rd, Chasselas Napoleon, from C. BAKER, Esq., Forest Hill. Thus, London-grown Grapes were successful in several of the classes.

GRAPES.

By far the most important class for Grapes was one in which Messrs. Wm. & Sons, offered a Challenge Cup in celebration of the jubilee of their firm. It is an exacting class, and calls for eighteen bunches, none

COLLECTION OF HARDY FRUIT GROWN IN OPEN.

Collection of hardy fruit, forty dishes, distinct, grown entirely in the open, and not to include more than fifteen varieties of Apples, and five of Peaches. The collections were staged in the 1st prize going to Mr. R. POTTER, gr. to Sir MARK W. COLLET, Bart., St. Cler, Kenning, Sevenoaks. This exhibition was very strong in Apples and Peaches, and between his dishes were arranged trails of Anjoulois and Ivy. Of Apples very fine were Lord Derby, Gloria Mundi, Warner's King, Lady Henrick, Bramley's Seedling, Golden Noble, Ribston Pippin, Cox's Orange Pippin, and Worcester Pearmain. His best Peaches were Beurre Balthé Père, Charles Ernest, Beurre Bachelier, Cannelle de la Cour, Marie Benoist, Durocheau, and Duchesse d'Angoulême. Besides these, he had good dishes of Grand Duke, Golden Drop, and Baby's Green Gage Plums; Brown Turkey Figs, Lady Palmerston Peach, a dish of Quinces, and some fine Colombs and Wabans. The 2nd prize was awarded to Mr. W. H. DAVIES, gr. to the Duke of Rutland, Belvoir Castle, Grantham; his collection included no Peaches, but fifteen dishes of nicely-coloured Apples, and Peaches Sea Eagle and Princess of Wales, very fine Cox's Golden Drop, white Magnum Bonum, Archduke, Reine Claude de Bavay, and Belle de Septembre Plums; Marbled Cherries (very good), red and white Currants, Doyenné (two varieties), and Marrying Gooseberries. The 3rd prize was taken by Mr. COLMANN, gr. to T. L. BOND, Esq., North Fild, Tonbridge, Kent, whose fruit was also very good. His collection comprised twelve dishes of Peaches, seventeen of Apples, and was made up with Peaches, Plums, Figs, Cherries, and a dish of quinces and Medlars.

COLLECTION OF HARDY FRUIT GROWN IN ORCHARD-HOUSE OR OTHERWISE.

In the succeeding class for twelve varieties distinctly grown, partly or entirely under glass, to illustrate orchard-house culture, Grapes to be excluded, but one exhibitor staged, Mr. R. POTTER, and he was worthily awarded the 1st prize. He had very fine Exquisite Peaches, Grand Duke Plum, Round Non Fig, Doyenné du Comice, Duchesse d'Angoulême and Princess Peaches, and three dishes of Apples.

DIVISION II.

We had over till next week our report of the Nurserymen's classes.

DIVISION III.

COMPETITION FOR MARKET GROWERS.

The series of classes in Division III., open to market growers only, is one of the most instructive in the Show, and also to growers and market men alike interesting.

Class 18 for a single layer of Black Hamburgh Grapes weighing not less than 12 lbs., shown in a single layer in a baby basket, brought two competitors. Only the 1st prize going to Messrs. W. & C. WELLS, Hatton Houslow, who had good bunches, well finished and packed with great care. Messrs. W. POTTER & SON, Marsh Farm, Twickenham, were 2nd, also with good bunches, the berries generally a little smaller than those shown by Messrs. WELLS. The 3rd prize was taken by white Grapes, any variety, in a single layer of a similar weight to the preceding, also shown in a baby basket. Mr. W. J. BATHO, Nether Street Nursery, Finchley, had half-a-dozen bunches of Canon Hall Muscat, generally well finished, some of the berries being particularly fine. This was the only exhibit.

Class 20 was for any variety, in any other package than a baby basket for market. The 1st prize went to Mr. W. J. BATHO again, with Canon Hall Muscat, in a cross-handled ordinary market basket lined with rose-coloured paper. Mr. JOHN T. BISSON, St. Sampson's Road, Gournesey, was 2nd. He had a small cross-handled market-basket, with bunches of well-finished All-rite Grapes. The 3rd prize was taken by Messrs. WELLS. Both exhibits were securely packed for a long journey.

Class 21 was for cooking Apples in four varieties, about 42 lbs. net of each in baskets or boxes. Most of the exhibitors adopted the ordinary round market skip, and in all cases they were lined with blue paper, wood shavings being employed between the Apples. Messrs. W. POTTER & SON, Prime Albert, Bismarck, Peasgood's Nonsuch, and Wellington, a most notable exhibit. Mr. E. BASHAM, Bassaleg, Newport, Mon., had white ramble hamper, the fruit carefully packed in wood shavings, the varieties were Newton Wonder, Ecklinville Seedling, Lord Derby, and Lane's Prince Albert. All the samples were very clean and bright. There were four competitors.

Class 22 was for four varieties of dessert Apples shown under the same conditions, with the exception that 20 lbs. was the weight. There were three competitors. The 1st prize was awarded to Mr. GEO. CHAMBERS, Shurtwell Farm, Mereworth, Kent, who had superb and richly coloured examples of King Pippin, Ribston Pippin, Cox's Orange Pippin, extra good, and Court pen in fruit. Messrs. W. POTTER & SON came 2nd, with finely finished fruit of King of Pippin, Allington Pippin, very fine; Cox's Orange, and Ribston Pippin.

Class 22 was for two varieties of cooking Apples in baskets about 20 lbs. of each, and Mr. GEO. CHAMBERS was placed 1st with highly developed examples of Warner's King and Lord Derby, both superbly finished. Mr. E. BASHAM was 2nd, with Gasconne's Scarlet and the Queen, having admirable finished fruit of each. Mr. CHAMBERS adopted the round skip lined with blue paper, and Mr. BASHAM the white hamper. There were five competitors.

Class 23 was for two varieties of Dessert Apples in baskets or boxes, about 20 lbs. of each, and Mr. H. F. MASON, Rectory Farm, Hampton Hill, was 1st with round skips of very finely finished fruit of Cox's Orange and Ribston Pippin. 2nd, Mr. E. BASHAM again, using white hampers, the varieties Allington Pippin, very fine, and Cox's Orange Pippin. There were five competitors.

Class 24 was for 42 lbs. net of any one variety of Apple in any improved form of package for market. There was an instruction to the judges that no prize was to be awarded unless they considered the box, basket, or other receptacle superior to those in ordinary use. There were five competitors; the 1st prize was awarded to Mr. E. BASHAM, who staged his fruit in a white square market hamper, the fruit packed in lines with wood-wool between them. The variety was Newton Wonder of very fine quality and well coloured. Mr. W. J. BATHO, The Vineries, Felshstone Road, Ipswich, was 2nd, with very fine Bismarck similarly packed. Two exhibitors used square wooden boxes, each fruit carefully wrapped in paper, with wood-wool between them.

Class 25 was for the same quantity of Apples as required, but an improved system of packing was requisite. There were three competitors, the 1st prize was awarded to Messrs. W. POTTER & SON, who had very fine Allington Pippin, each wrapped in tissue paper, and placed in a square wooden box, in layers, with blue paper between them, the box also lined with blue paper. Mr. E. BASHAM was 2nd, having Lane's Prince Albert packed as in the previous class. Mr. BATHO's exhibit consisted of 12 bunches, each in a cardboard box, but the Apples were somewhat loose in the boxes.

Class 27 was for Peaches in two varieties in two packages of about 20 lbs. capacity in each. There were six entries, the 1st prize was awarded to Mr. GEO. CHAMBERS, who had very fine Pitnastou Duchess and Doyenné du Comice in round skips lined with wood-wool and tissue paper. Mr. W. POTTER & SON were 2nd, the 1st prize being a wooden box, each fruit lying on a bed of rose-coloured paper and wood-wool; the varieties were Pitnastou Duchess and Louise Bonne of Jersey.

Class 28 for twenty-four to forty-eight fruits of Peaches according to size, of any one choice dessert variety suitably packed in one package for market. Mr. POTTER & SON taking the 1st prize with finely coloured Doyenné du Comice in an oblong wooden box, one layer only, each fruit in a bed of white paper. Mr. A. WYATT was 2nd, he had Pitnastou Duchess similarly packed, using rose-coloured paper instead of white.

Class 29 was for a collection of twelve varieties of Apples and six of Peaches distinct. Eighteen of each laid flat on a table without dishes or baskets. Only five or six leaves allowed for decoration, and the space occupied limited to 6 ft. by 3 ft. There were two competitors, and again Messrs. POTTER & SON took the 1st prize; of Apples they had Wellington, Cox's Pomona, Bismarck, Lane's Prince Albert, Allington Pippin, Allington, Rosemary Russet, King of Pippin, Mabbott's Pearmain, Cox's Orange Pippin, Wealthy Doyenné du Comice, Durocheau, Pitnastou Duchess, Marie Louise d'Écluse, Beurre Fenouquet and Beurre Superfin, a very fine collection indeed. Messrs. LOGGON & SON, Heston Farm, were 2nd with some very good fruit, the Apples were Lane's Prince Albert, Ecklinville Seedling, Worcester Pearmain, Stirling Castle, The Queen, Cox's Orange Pippin, Warner's King, Duchess Favourite, Pott's Seedling, Bismarck, Lord Grosvenor, and the following Peaches, Pitnastou Duchess, Doyenné du Comice, and Louise Bonne. Conference, Emile d'Heyst, and Marie Louise d'Écluse.

Class 30 for a basket or box of Plums of about 25 lbs. capacity, of any one variety, there was no competitor.

Class 31 was for a basket or box of about 12 lbs. capacity, of Tomatoes, suitably packed; there were four competitors, the 1st prize going to Mr. CHAS. MOOK, Chessington Court Nurseries, Surbiton, who had a small hand-basket of very finely finished fruit of Comet. Messrs. W. POTTER & SON were 2nd, having a small round skip of the same variety, the fruit smaller and not so finely coloured.

DIVISION IV.

FRUITS GROWN IN THE OPEN AIR.

(Open to Gardeners and Amateurs only.)

APPLES.

The first class was for twenty-four dishes distinct, sixteen cooking and eight dessert, the latter to be placed in the front row. In this, the largest class for Apples, four exhibitors competed, and the samples generally were very fine and clean throughout. The 1st prize position was well won by Mr. Woodward, gr. to ROGER LEVA, Esq., Barham Court, Maidstone, and perhaps it will suffice to remark that his dishes of fruit were collectively well up to the high standard of this

well-known exhibitor. The samples were throughout well coloured, and well coloured. The back row of cooking varieties were magnificent, and comprised the following varieties: Beauty of Kent, Bismarck, Belle Dubois, Emperor Alexander, Peasgood's Nonsuch, Duffin, Ounce, Sandringham, and Chelmsford Wonder. Middle row: Allerton, Waltham Abbey, Bramley's Seedling, Stone's, Lord Derby, Warner's King, Golden Noble, and Mrs. Barron. The front row of dessert comprised Ribston Pippin, Cox's Orange Pippin, Wealthy, Allington Pippin, Washington, Gasconne's Scarlet, American Mother, and Reineette Procece. The 2nd prize was awarded to Mr. W. H. BACON, gr. to Sir M. SAMUEL, Mote Park, Maidstone, whose best dishes were Peasgood's Nonsuch, Gloria Mundi, Lord Sutherland Warner's King, Bismarck, Gasconne's Scarlet, Cox's Orange Pippin, and Allington Pippin; but they fell considerably below Mr. Woodward's standard. Mr. W. E. HUMPHREYS, gr. to A. H. SKEE, Esq., The Grange, Hackbridge, Surrey, was a close 3rd.

In the next class, that for twelve dishes, distinct, eight cooking and four dessert, from which the exhibitors in the preceding class were excluded, there were again four competitors. The 1st prize was awarded to Mr. Woodward, gr. to Mr. M. DAVIES, gr. to Lord Derby, heavy collection. Gloria Mundi was very fine, also Warner's King and Peasgood's Nonsuch; the remaining dishes were Lady Henrick, Emperor Alexander, Newton Wonder, Annie Elizabeth, The Queen, Ribston Pippin, Washington, Baumann's Winter Reineette, and Fearn's Pippin; the 2nd prize went to Mr. R. PARKER, gr. to the Duke of Rutland and Gordon, K.T., good-looking dishes. The best of his boxes were Lord Derby, Emperor Alexander, Royal Jubilee, Gloria Mundi, Wellington, Striped Boening, and Adams Pearmain; Mr. NEALE, gr. to C. J. STAFFORD, Esq., West Farleigh, Kent, was 3rd; in his collection was a fine dish of Peasgood's Nonsuch.

Class 31 required nine dishes, distinct, six cooking and three dessert. Five collections were staged, and from the empty standing room entries had evidently not arrived. Mr. W. H. DAVIES, gr. to A. W. WRIGHT, Esq., Quarry House, Newent, Glos., succeeded in winning the 1st position with a good and even collection, each dish being perfect. His dessert varieties were Worcester Pearmain highly coloured, Ribston Pippin, and Cox's Orange Pippin; and the cooking varieties, Emperor Alexander, Royal Jubilee, Mrs. Barron, Mr. A. Smith, gr. to the Lady Superior, The Convent, Rochampton, was 2nd; Mr. WALLACE, gr. to H. C. SMITH, Esq., Mount Clare, Roehampton, 3rd.

Six dishes of Cooking Apples, distinct.—Mr. WOODWARD here was invincible, easily winning the 1st prize with six heavy dishes, comprising Alexander (very fine), Belle Dubois, Warner's King, Peasgood's Nonsuch, Stone's, and Bismarck. R. M. WHITING, Esq., Credenhill, Hereford, was 2nd.

Cooking Apples, three dishes.—Here a Devonshire exhibit came well to the front. Mr. D. BUCK, gr. to R. H. HILL, Esq., Credenhill, Hereford, being the 1st with three highly coloured samples of Emperor Alexander, Peasgood's Nonsuch, and Warner's King. 2nd, Mr. T. NEALE. Seven collections were staged.

Dessert Apples, six dishes, distinct.—1st, Mr. WOODWARD, with Washington, Allington Pippin, Cox's Orange Pippin, Scarlet Pearmain, and Wealthy. Equal 2nd prizes were awarded Mr. G. LOCK and Mr. NEALE, but the Devonshire Apples were the more highly coloured, and of good size. Seven collections were staged, all good.

In Class 32 for three dishes, distinct, there were ten exhibitors, the 1st prize going to Mr. W. H. DAVIES, gr. to Cox's Orange Pippin, Ribston Pippin, and Blenheim Orange; 2nd, R. M. WHITING, Esq.

DESSERT PEARS.

Eighteen dishes distinct.—Five exhibitors staged collections in this class. The quality throughout was generally good. Mr. WOODWARD was here again very strong, winning the 1st place with a grand lot of specimens. They comprised the following varieties, Doyenné Boussoch, Beurre Alexander Lucas, Pitnastou Duchess, Duchesse d'Angoulême, Margarete Marillat, Doyenné du Comice, Emile d'Heyst, Princess, Beurre Superfin, Beurre Diel, Beurre Balthé Père, Durocheau, Cannelle de la Cour, Fosse Crassane, and Magnate. Mr. GEO. TRIGG, gr. to the Earl of ASHBURHAM, Ashburnham Place, Battle, took the 2nd prize, his best dishes were Pitnastou Duchess, Duchesse d'Angoulême, Beurre Diel, and Doyenné du Comice.

Nine Dishes of Peaches, distinct.—1st, Wm. JONES, gr. to J. R. BROTHAM, Esq., Wallington Bridge, Carshalton, his finest dishes being Pitnastou Duchess, Beurre Bachelier, Marie Louise, and Duchesse d'Angoulême; 2nd, Mr. J. W. BARKS, gr. to H. P. WOODWARD, Esq., Castle Hill, Hetchingley, Surrey. Five collections were staged.

For Six Dishes of Peaches, only three competed, the 1st prize going to Mr. W. SANCY, gr. to A. BENSON, Esq., Upper Gatton Park, Merstham. In this exhibit there was a very fine dish of Louise Bonne of Jersey. Pitnastou Duchess, and Doyenné du Comice were also good. 2nd, Mr. A. SMITH.

Three Dishes of Pears.—Six exhibits competed in this class. The first prize being won by Mr. R. Edwards, gr. to C. A. MORRIS FIELD, Esq., Icedley Lees, sevenoaks, for highly-coloured samples of Pitman Duchesse, Doyenne du Comice, and Louise Bonne of Jersey. 2nd, Mr. W. A. COOK, Compton Bassett, Calne, Wilts.

Class 4 was a class for six dishes of Pears, to be selected from the following varieties—Beurre Rance, Easter Beurré, Passe Crassane, Marie Benoist, Knight's Monarch, Le Lectier, Doyenne d'Alençon, Duchesse de Bordeaux, Beurré Hardy, Olivier des Serres, and Président Barabé. The 1st prize was won by Mr. WOODWARD, with Marie Benoist, Beurré Rance, Passe Crassane, Le Lectier, Easter Beurré, and Doyenne d'Alençon; 2nd, Mr. T. CHALLIS, gr. to the Earl of PEMBROKE, Wilton House, Salisbury.

Class 4, three dishes of cooking Pears, distinct—1st, Mr. WOODWARD, with Cathée, Beurré Clément, and General Tolleben; 2nd, Mr. W. P. BOUND.

COLMAN, Esq., Gatton Park, Reigate. Fine collections were staged.

PEACHES

In the class for one dish of one variety grown entirely out-of-doors, the 1st prize was awarded to Mr. J. H. GOODHIE, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, for a grand dish of Sea Eagle. 2nd, Mr. SIMPSON, gr. to C. F. FOULING, Esq., The House, Reclampton, coming 2nd with a poor dish of the same variety.

Eight other exhibitors competed, Princess of Wales being the only other variety shown.

NETVARINES

These were grown under similar conditions to the Peaches. Only two dishes were staged. Mr. GOODHIE winning the 1st prize with Victoria; Mr. SIMPSON, Grove House, Reclampton, coming 2nd with a poor dish of the same variety.

PLUMS

One Dish of Dessert of One Variety. Among eleven exhibitors, the 1st prize was awarded to Mr. J. VERT, gr. to Lord HARRINGTON, Audley End, Sutton Walden, for a nice dish of the Golden Drop; 2nd, Mr. CHALLIS, with the same variety. Others staged were Gage and Rivers' Lake Orange.

One Dish of Cooking Plum of One Variety. 1st, Mr. R. SMITH, gr. to Mrs. PEARSON, Rippledonbury, Hertford, with Monarch; 2nd, Mr. GOODHIE with Magnum Bonum. Nine dishes were staged, Grand Duke, Belgian Purple, Ardèche and Wyndle being the other varieties represented.

DIVISION V.

Special District County Prizes, open to gardeners and amateurs only, for six dishes of Apples, distinct, four cooking and two dessert, and for six dishes of dessert Pears, distinct, but shown in separate classes.

KENT

There were six exhibitors from this county. The 1st prize for six dishes of Apples went to Mr. W. T. STOWERS, gr. to E. H. DEAN, Esq., Whitfield, Sittingbourne, who had splendid examples of Peasgood's Nonsuch, Warner's King, Glory of England, Lane's Prince Albert, Blenheim Orange, and Cox's Orange Pippin; Mr. W. ELLIOT, gr. to W. BAILEY, Esq., Farmingdale, was 2nd with smaller fruits, his varieties, Ecklinville Seedling, Maid of Kent, Queen Caroline, Winter Quoining, Cox's Orange Pippin, and King of the Pippins.

The best six dishes of Pears came from Mr. STOWERS, who had very fine fruit of Doyenne Boussoch, Pitman Duchesse, Doyenne du Comice, Duchesse d'Angoulême, Beurré Hardy, and Conseiller de la Cour; Mr. E. COLEMAN, gr. to T. L. BOY, Esq., Tonbridge, Kent, came 2nd, also with very fine fruit of Marie Benoist, Pitman Duchesse, Mme. André Leroy, Doyenne du Comice, and Durondeau.

SURREY, SUSSEX, HANTS, DORSET, SOMERSET.

DEVON AND CORNWALL.

From this group of counties came seven collections of six dishes of Apples and four collections of six dishes of Pears. The best six dishes of Apples came from Mr. S. LOCK, gr. to B. H. HILL, Esq., Newcombe, Crediton, Devon, who had splendid fruit of Emperor Alexander, Peasgood's Nonsuch, Mère de Menage, Blenheim Orange, Cox's Orange Pippin and Ribston Pippin; 2nd, Mr. T. TURTON, gr. to J. K. H. WYNDLE, Esq., Sherborne Castle, Dorset, had in good form Mère de Menage, Peasgood's Nonsuch, The Queen, Pott's Seedling, Ribston Pippin and Cox's Orange Pippin.

Pears. Mr. T. TURTON came in 1st with six dishes of very fine Pears, having Beurré Alexandre, Lucas, Beurré Diel, Durondeau, Pitman Duchesse, and Beurré Superfin. Mr. S. LOCK was 2nd, with good though smaller fruit—Pitman Duchesse, Durondeau, Graft Moorway, Duchesse d'Angoulême, Doyenne du Comice and Beurré Diel.

WILTS, GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS AND MIDDLESEX.

This group of counties furnished five collections of six dishes of Apples and six collections of six dishes of Pears. The 1st prize for six dishes of Apples fell to

Mr. W. H. DAVIES, gr. to A. W. S. WRIGHT, Esq., Quatt House, Newport, South Wales, who had very fine fruit, generally well-coloured, of Peasgood's Nonsuch, Warner's King, Hollandbury, Mrs. Barron, Cox's Orange Pippin and Ribston Pippin; Mr. C. GAGE, gr. to J. R. FORTESCUE, Esq., Droppore, Maidenhead, was 2nd with an excellent lot, consisting of Gloria Mundi, Warner's King, Peasgood's Nonsuch, Mère de Menage, Cox's Orange Pippin, and Ribston Pippin.

With six dishes of Pears, Mr. W. H. BARNISTON, gr. to Mrs. AMES, Giff House, Westbury-on-Trym, was 1st with fine and well-finished fruit of Doyenne Boussoch, Souvenir du Congrès, Beurré Fontenay, Doyenne du Comice, Beurré Hardy, and Durondeau. Mr. W. A. COOK, Compton Bassett, Calne, Wilts, was 2nd with good examples of Pitman Duchesse, Beurré Diel, Marie Louise, Doyenne du Comice, Louise Bonne of Jersey, and Easter Beurré.

ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HANTS, AND RUTLAND.

From this group of counties one collection of Apples only and two of Pears were contributed. Mr. H. H. HOWARD, Surrey Manor, Hingham, Norfolk, was awarded the 1st prize for six dishes of Apples, having very good fruit of Lane's Prince Albert, Cox's Pomona, Bramley's Seedling, Peasgood's Nonsuch, King of the Pippins, and Cox's Orange Pippin.

Pears. Mr. W. HARRISON, gr. to Col. ABERCROMBIE, Hillingbury Place, Bishops Cleeve, was 1st with six dishes, having Pitman Duchesse, Marie Benoist, Doyenne du Comice, Beurré Hardy, Beurré Diel, and Duchesse d'Angoulême; Mr. J. VERT, gr. to BRAYBROOKE, Audley End, Sutton Walden, was 2nd, with good fruit of Passe Crassane, Pitman Duchesse, Knight's Monarch, Doyenne du Comice, St. His Moins, and Nouvelle Hélice.

LINCOLN, NORTHAMPTON, WILTSHIRE, LEICESTER, NOTTS, DERBY, STAFFS, SHROPSHIRE, AND CHESHIRE.

From this group of counties came four collections of six dishes of Apples and four of Pears. The best six dishes of Apples, all very good, came from Mr. JOHN LEE, Highor, Beltingham, Cheshire, who had Peasgood's Nonsuch, Gloria Mundi, The Queen, Warner's King, Cox's Orange Pippin, and King of Pippins; Mr. JOHN NAYLOR, gr. to HENRY KNIGHT, Esq., Stamford, came 2nd with well-coloured, sound fruit of Peasgood's Nonsuch, Waterloo's King, Emperor Alexander, Blenheim Orange, Cox's Orange Pippin, and St. Michael.

Pears. The best six dishes, good medium-sized examples, came from Mr. W. H. DAVIES, gr. to the Duke of RICHMOND, Belconn, Leicestershire, the varieties, Victoria, Lane's Prince Albert, Mère de Menage, Beurré Rance, Fondante d'Alençon, Mère Louise, and Doyenne du Comice; 2nd, Mr. JOHN NAYLOR, with Beurré Diel, Duchesse d'Angoulême, Beurré Rance, Easter Beurré, Doyenne Boussoch, the other dish appeared to contain three fruits of Marie Louise and three of Pitman Duchesse.

WALES.

Apples. Wales sent two collections of six dishes of Apples and two of Pears. The best six dishes of Apples came from Mr. HENRY FORTLEIGH, gr. to Col. COXWELL, Wals, Ruthin Castle, N. Wales, who had Peasgood's Nonsuch, Ecklinville Seedling, Warner's King, Striped Beurré, Worcester Pearmain, and American Mother; 2nd, Mr. R. DAVYD, gr. to Mrs. MIDDLETON, Burleigh, with Warner's King, Blenheim Orange, Tower of Glean, Waltham Bussell, Bedfordshire Foundling, and Ribston Pippin.

Pears. Mr. F. FOX, gr. to Mrs. DAVID EVANS, Highmoor, Llangyfelach, N. Wales, was awarded the 1st prize for six dishes of Pears, having good fruit of Doyenne du Comice, Durondeau, Beurré Hardy, Graft Moorway, Beurré d'Amis, and Beurré Rance; 2nd, Mr. HENRY FORTLEIGH, with Durondeau, Beurré Diel, Souvenir du Congrès, Pitman Duchesse, Graft Moorway, and Marie Louise.

THE SIX NORTHERN COUNTIES OF ENGLAND AND THE ISLE OF MAN.

From this group of counties came five collections of six dishes of Apples and four dishes of Pears.

Apples. The best six dishes were from Mr. W. C. PORTSMOUTH, gr. to Col. WYLLIE, Herington Hall, Sunderland, who had well-finished fruit of Lady Henker, Blenheim Orange, Alfriston, Northern Dumping, Worcester Pearmain and King of Pippins; 2nd, Mr. JAS. SAKESIDE, Larbeck Gardens, St. Evedston, Garstang, with large, but less finished fruit of Tower of Glean, Warner's King, Mère de Menage and Nonsuch, Ribston Pippin, very small; and Blenheim Pippin.

Pears. The best six dishes came from Mr. J. McINDOE, gr. to Sir JOSEPH PRYSE, Bart., M.P., Harton Hall, Greatborough, with Louise Bonne of Jersey, Beurré Hardy, Pitman Duchesse, Beurré Bachelier, Beurré Diel and Marie Louise, with rather brighter, but less finished fruit. Mr. W. CHUCK, gr. to H. THRELKESDAN, Esq., Broadworth Hall, Doncaster, was 2nd, with Pitman Duchesse, Beurré St. Quentin, Beurré Diel, Beurré Superfin, Easter Beurré, and Gansel's Bergamot.

SCOTLAND.

The class for Pears was well represented by the premier exhibit from Mr. Day, gr. to the Earl of FAULHAY, Giff House, Westbury-on-Trym, who had the finest fruit of Pitman Duchesse, Beurré Diel, Marie Louise and J. Doyenne Boussoch. All were fully grown fruit; 2nd to Mr. Webster, gr. to the Duke of RICHMOND AND GORDON, Gordon Castle, Forcubers, who had excellent dishes of Fondante de Bois, Mère Louise, and Doyenne du Comice.

Apples. Mr. Flower was 1st in his class for Apples with heavy well-finished fruit, those of Peasgood's Nonsuch, Newton Wood and Bismark were specially fine; 2nd to Mr. Cullin, gr. to C. A. PHILLIPS, Esq., Dalrymple Castle, Douglas, whose best were Peasgood's Nonsuch and Stirling Castle.

IRELAND.

Two capital exhibits of Apples were staged in this class, and equal 1st prizes were awarded to Mr. Weston, gr. to Viscount DUNCANSON, Boshboragh, Co. Kilkenny, and to Mr. J. ORR, Longhull, Co. Antrim—the former had Lane's Prince Albert, Golden Spruce and the Queen, extra good, whilst the best trio of the latter were Peasgood's, Emperor Alexander, and Loddington.

THE CHANNEL ISLANDS.

For Pears and Apples the 1st prizes were awarded to Mr. GAVEY, gr. to O. C. KNATCHBULL, Esq., Millbrook, Jersey, of the Pears, which were heavy, the most were of Doyenne du Comice, Duchesse d'Angoulême, Graft Moorway and Chammontelle; and of Apples, Warner's King, Blenheim Orange, Lane's Prince Albert, and Bramley's Seedling.

WORKSOP, HERFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, AND PEMBROKE.

From this group of counties came one collection of six dishes of Apples and two of six dishes of Pears.

The six dishes of Apples came from R. M. WHITING, Esq., Creditonhill, Hereford, who had very fine finished fruit of Peasgood's Nonsuch, Lord Suffield, very fine, Stirling Castle, Tyler's Kernel, James Grove, and Cox's Orange Pippin.

Pears. With six dishes of Pears, Mr. J. RICK, gr. to Col. HARRINGTON, Monmouth House, Ross, was 1st, with fruit of very fine quality, consisting of Pitman Duchesse, Beurré Rose, Doyenne du Comice, Marched de la Cour, and Louise Bonne of Jersey; 2nd, Mr. J. E. JONES, gr. to H. L. LEWIS, Esq., Kynaston, Ross, Herefordshire, with excellent fruit of Duchesse d'Angoulême, Doyenne du Comice, Pitman Duchesse, Conseiller de la Cour, Marie Benoist, and Louise Bonne of Jersey.

DIVISION VI.

SINGLE DISHES OF FRUIT GROWN IN THE OPEN AIR

(Gardeners and Amateurs only.)

DESSERT APPLES.

These began with twenty dishes of Adams' Pearmain, of which Mr. F. W. THOMAS, Wamock, Sussex, had the best sample. Mr. WOODWARD, Barham Court, Kent, coming 2nd. Of that poor-looking variety Allen's Everlasting, only one dish was presented, and that by Mr. WOODWARD, who no doubt put up his best. Alington Pippin was, however, represented by eleven dishes, some very fine indeed, but large. Mr. WOODWARD's sample was beautifully coloured, and the fruits were of fair size; Mr. CHALLIS, gr. to the Earl of PEMBROKE, Wilton House, Salisbury, was 2nd.

Small samples of Blenheim Orange, to pass through a 3 inch ring, were in quantity, seventeen dishes being staged. Here Mr. A. J. CARTER, Billingshurst, Sussex, was 1st, with a rich coloured sample; Mr. R. WHITING, Creditonhill, Hereford, coming 2nd, with a nice sample.

There were but four lots of Bradlock's Nonpareil, the best coming from Mr. HAGON, gr. to E. A. LEE, Esq., Liphook, Hants; Mr. S. LOCK, gr. to B. H. HILL, Esq., Crediton, Devon, was 2nd.

That famous Apple, Cox's Orange Pippin, was represented by no fewer than thirty-three dishes, and yet there were but two prizes to award; that seems a great mistake. Many of the samples were very fine and beautifully finished. Mr. WOODWARD was 1st here, fruits superbly coloured; T. C. PATE, Esq., Twickenham, coming 2nd.

In contrast, Brownlee's Russet showed four dishes only. Mr. E. COLEMAN, gr. to T. L. BOY, Esq., Tonbridge, beating Mr. WOODWARD for 1st place. The samples showed the variety in its true form.

Claygate Pearmain made a poor show, the admirable Barham Court grower being again 1st; Mr. WHITING, an old competitor, 2nd, with Cockle Pippin; Mr. TURTON, gr. to J. N. D. DUBOIS, Esq., M.P., Sherborne Castle, Dorset, was 3rd, having five excellent fruits; also, Mr. J. WATSON, who came 2nd. There were eight lots of this, but only two of that poor-looking variety Duchess of Devonshire, greenish, and not unlike the old French Cax. The best came from Mr. HUMPHREYS, gr. to A. H. SMER, Esq., Hackbridge, Surrey. Mr. J. RICK, gr. to G. H. HYFIELD, Esq., coming 2nd.

Egremont Russet was represented by three dishes. Messrs. WOODWARD and WHITING, taking the prizes

with well-coloured samples. There were eight dishes of *Beauté de Pippin*, of which Mr. STOWERS, gr. to S. H. DEAN, Esq., Sittingbourne, had the best, richly coloured. Mr. O'BRIEN, gr. to the Duke of FIFE, East Sheen, coming 2nd.

There were six dishes of small Gascongne's Scarlet. Mr. STOWERS having some richly coloured samples; Mr. CLINCH, also of Sittingbourne, coming 2nd.

King of the Pippins was shown in twenty-two dishes, all well-coloured and handsome. Mr. W. H. DAVIES, gr. to W. S. WRIGHT, Esq., Sevenoaks, was 1st with a beautiful sample; Mr. L. VIGOR, gr. to the Earl of ASH-BURNHAM, Battle, being 2nd, with a fine dish.

King of Tomkins County seemed to be an absurdly large Apple to class as a dessert variety, being here like *Beauté de Kent*. Four dishes were shown, the best coming from Mr. WOODWARD and Mr. A. SMITH, gr. to the LADY SUPERIOR, The Convent, Edohampton.

Only three dishes of that dubious Apple, Lord Burgley were staged. Mr. W. CAMM, gr. to Captain FORESTER, Battle Abbey, Sussex, coming 1st; and Mr. EDWARDS, gr. to Colonel CONSWATHS West, Ruffin Castle, was 2nd.

Manthorn Pearmain had four dishes, Messrs. RICH and C. ROSS, gr. to Captain CARSTIES, Newbury, taking the prizes.

Old Margil brought twelve dishes, generally small, Mr. PAVES being 1st, Mr. RICK 2nd.

There were nine dishes of American Mother Apple. Mr. WHITING coming 1st, with rich colour; Mr. T. H. SLADE, gr. to Lord POLTHORNE, Exeter, being 2nd, his fruit being also fully coloured.

Old Nonpareil was seen in five dishes, rather indifferent samples. Mr. CHALLIS had the best.

Good old Kilston Pippin was in fine form in nineteen dishes. Mr. BARBER, gr. to H. PARKINER, Esq., Blechley, Surrey, being 1st with richly coloured samples; Mr. WOODWARD coming 2nd. Mr. CAMBER had the best Rosemary Russet Apple, and Mr. WHITING came 2nd out of four dishes. A very pretty sample of *Loos Nonpareil* came from Mr. LOCK; only two dishes were staged. Of Scarlet Nonpareil there were six dishes, Messrs. WOODWARD and ROSS taking the prizes. That good late Apple Sturmer Pippin was seen in fourteen dishes, the best coming from Mr. STOWERS, Mr. BARBER being 2nd, both having fine samples. There was but one dish of Winter quince, in a late form of the old tree, which came from Mr. THOMAS, of Folgate, Sussex.

Finally, in this section came any other variety, in which class there were no fewer than thirty dishes, four prizes being awarded. Here Mr. C. ROSS came 1st with his pretty new round striped variety The Haddon; Washington, superbly coloured, coming 2nd and 3rd, from Mr. EDWARDS, gr. to C. A. M. FIELD, Esq., Sevenoaks, and Mr. PAVES; Mr. RICH coming 4th with Worcester Pearmain.

KITCHEN OR COOKING VARIETIES.

This section commenced with Allerton (four dishes), Messrs. Woodward and ROSS having the finest samples.

Next came Anne Elizabeth, shown in six lots, generally good. Mr. TUCKER having a very true sample, Mr. M. POTTER, gr. to Sir MARK W. COLLETT, Kenning, Sevenoaks, being 2nd.

There were but three dishes of *Beauté de Kent*, the best coming from Barham Court; and 2nd from Mr. WHITING.

Of Belle de Hollande there were but four dishes. Mr. WOODWARD having the best. Mr. STAFF coming 2nd, Barham Court was again 1st in the Bismarck class, with a splendid sample; Mr. LOCK having very fine coloured tents for 2nd place.

In the class for large Blenheim Orange, Mr. WOODWARD was 1st with large conical samples, lacking colour; Mr. CARTER was 2nd with flatish, handsome, well-coloured fruits.

For prizes offered by Messrs. Pearson & Sons, Lowland Nurseries, Notts, in the northern districts for Newlon Wonder, only three dishes were seen. The best came from Mr. W. H. DYERS, gr. to His Grace the Duke of RUTLAND, Belvoir Castle; J. LEE, Esq., Cheshire, coming 2nd.

But in the corresponding class, for the southern districts there were eleven dishes. Mr. WOODWARD having a superb sample for 1st; Mr. HUDSON, gr. to LEONARD DE ROUSSILLE, Esq., Gomersbury House, being 2nd; and Mr. A. BASTIE, gr. to the Rev. O. S. POWELL, Weybridge, being 3rd.

There were ten dishes of Bramley's Seedling, prizes offered by Messrs. H. Merryweather & Co., Southwell, Notts. Gigantic yet handsome fruits came from Mr. WOODWARD; Mr. CHALLIS being 2nd, also with splendid samples.

There were six lots of Cox's Pomona, generally nobly coloured. The best came from Mr. STOWERS and Mr. WOODWARD.

With Dumelow's Seedling (Wellington), Mr. GARDNER was well 1st, with extremely handsome characteristic samples; Mr. SMITH coming 2nd with more conical fruits.

One of the most perfect, fine, and finished dishes in the show was the noble one of Emperor Alexander from Mr. WOODWARD, who easily took 1st place with it in the class; Mr. STOWERS was 2nd. These were the only dishes shown.

There were seven lots of large Gascongne's Scarlet, all richly coloured, Mr. STOWERS coming 1st, and Mr. MELVER, gr. to F. H. D. WHITMORE, Esq., Grays, Essex, following.

Golden Noble was well shown in ten dishes, Messrs. WOODWARD and PAVES taking the prizes with very handsome samples.

There were but three dishes of Golden Spire, Barham Court again coming 1st; and Mr. WESTON, gr. to Viscount PUNANSON, Bessborough, Ireland, coming 2nd.

Some remarkable samples of Horned or Pearmain were seen in the four dishes staged, Messrs. WHITING and RICK taking the prizes.

Lane's Prince Albert was represented by twelve dishes, of which Mr. STOWERS' huge clean fruit took 1st place; Mr. CARTER coming 2nd. Several very fine dishes got to Mr. AWARD.

Messrs. WOODWARD and STOWERS had the finest Lord Derby, and the same exhibitors, but in reverse order, took the prizes for *Mercé de Menage*, wondrously coloured fruit.

There were but six dishes of Peasegull Nonpareil grand samples, coming from Barham Court; Mr. STOWERS came 2nd with giant fruits also.

Mr. C. ROSS had the only dish of Royal Jubilee, now getting over, and Messrs. WOODWARD and A. SMITH had the best Sandringham.

There were but three dishes of Stirling Castle, Messrs. ROSS and WHITING taking the prizes. Mr. WOODWARD had the finest Stone's Pippin; Mr. WHITING being 2nd. Mr. DAVIES had the best sample of The Queen, very fine and beautifully coloured. Mr. WOODWARD being 2nd, and Mr. HAYON the best Tower of Glems. There were only two dishes of Waltham Abbey Seedling, Barham Court and Mr. CLINCH getting the awards. Seven dishes of Warner's King were staged. Mr. WOODWARD having giant samples, also had Mr. STOWERS.

Finally came the class for any other variety, in which seventeen dishes were staged. Mr. WOODWARD securing another with such splendid Belle de Indes; Mr. STOWERS having the same with Gloria Mundi; and Mr. WHITING coming 2nd with Lord Sulist; and Mr. TUCKER 4th with beautiful Hollandbury.

DESSERT PEARS.

Beurre Bosc. This delicious early autumn variety, one which succeeds as a standard on light soils in the south as to standard and as a wall tree almost anywhere in England and the warmer parts of Scotland, was shown by five exhibitors; and excepting in regard to degree of ripeness, there was little to choose between the dishes. H. PICKARD, Esq., Manor House, Borslame, Mr. J. WEBB, was 1st; and Messrs. AMES, Cole House, Westbury-on-Trym, Mr. W. H. BARNISTON, was 2nd.

With Beurre d'Anjou, of which three dishes were shown, a Beurre rather later than that first named, Mrs. STOKES was 1st with unblemished examples; and T. L. BOND, Esq., North Frith, Tonbridge, Kent, was 2nd, the fruit showing marked differences from the former.

Beurré Dufé, a variety in general cultivation, and deservedly so, was shown by eleven persons, there being in the matter of size alone any marked difference. The 1st prize was taken by J. K. D. WINGFIELD DUNN, Esq., Sherborne Castle, Dorset (gr. Mr. T. TURTON), with extremely fine examples of perfectly unblemished fruit. This dish was much heavier than any other exhibited.

The 2nd prize was taken by Captain FORESTER, Battle Abbey, Sussex (gr. Mr. W. CAMM). Good dishes were shown by ROGER LEIGH, Esq., Barham Court (gr. Mr. W. WOODWARD), and Mr. W. S. STAFF, Burlington Gardens, Chiswick.

Beurre Dumont was shown twice, ROGER LEIGH Esq., Barham Court, Maidstone (gr. Mr. G. WOODWARD), and C. A. MORTON, Esq., Berkeley Rect., Sevenoaks (gr. Mr. R. EDWARDS), and with fruits one-third less in size, but of higher colour than the winning dish.

The handsome Pear Beurre Hardy was shown in the number of eight dishes, of almost equal merit. Mr. GEORGE WOODWARD, gr. Barham Court, 1st; and H. DEAN, Esq., Whitehall, Sittingbourne (gr. Mr. W. T. STOWERS), 2nd.

Beurre Superfin was shown in the number of six dishes. Mr. W. T. STOWERS, gr. Whitehall, Sittingbourne, being 1st, with fruits of unusually large size; 2nd, Rev. O. S. POWELL, Woburn Park, Weybridge (gr. Mr. A. BASTIE).

Comté de Langy was shown in the number of six dishes, and the 1st prize was taken by SIR M. SAMUEL, Mole Park, Maidstone (gr. Mr. W. H. BACON); 2nd, J. T. CHARLESWORTH, Esq., Nutfield Court, Redhill, Surrey (gr. Mr. T. W. HEBBARD).

Pear Conference numbered six dishes, the distinctive russet patches coming out remarkably in the winning exhibits. There was little difference in the size of the fruit. H. PARKINER, Esq., Castle Hill, Bletchingly, Surrey (gr. Mr. J. W. BARKS), was 1st; and Mr. GBO, WOODWARD, Barham Court, 2nd.

The favourite Doge du Conice was shown in the number of sixteen dishes, and some of the dishes were very highly coloured. The 1st prize was taken by Mr. G. WOODWARD, with faultless examples, nearly ripe; and the 2nd by Lord POLTHORNE, Poltimore Park, Exeter (gr. Mr. T. H. SLADE), with almost as fine examples, but not showing the colour of the Kentish fruits.

That showy Pear Durondeau, was shown in nine dishes, the size varying greatly in the different dishes. The 1st prize was taken by Mr. T. TUCKER, for very handsome large fruits without a flaw; and the 2nd by Mr. GBO, WOODWARD, the Kentish fruit being of the higher colour; that from Mole Park being almost entirely crimson, but in size was much under that of the winning dishes.

Ester Isauri.—Among eight exhibitors, Mr. W. G. STOKES, gr. to G. H. DEAN, Esq., came 1st with a fine and clean sample; 2nd, Mr. WOODWARD.

Ester d'Heyst.—1st, Mr. TURTON, gr. to J. K. D. WINGFIELD DUNN, Esq., Mole Park, with extra fine fruits for this variety; 2nd, Mr. WOODWARD. Five come 2nd.

Fantôme de Thiriot.—1st, Mr. WOODWARD, the only exhibitor.

Abnt Maveau.—The competition was keen in this class, fifteen competitors staging the 1st prize going to Mr. W. M. JONES, 2nd, Mr. A. BASTIE, Weybridge.

Joséphine de Malines.—1st, Mr. CHALLIS, with a very clean sample; 2nd, Mr. WOODWARD. Eleven exhibitors staged.

Louis Bonie de Jersey.—Some very fine dishes were staged in this class. 1st, Mr. W. M. JONES; 2nd, Mr. COLEMAN, gr. to T. L. BOND, Esq., North Frith, Tonbridge. Fifteen dishes were staged, most of the samples being highly coloured.

Marie Louise.—Eleven exhibitors competed with this favourite Pear, the 1st prize going to Mr. WOODWARD; 2nd, Mr. CAMM, gr. to Captain FORESTER, Battle Abbey, for a very pretty dish.

Noirette Fétée.—The 1st prize was awarded to Mr. F. W. THOMAS, Wainlock, Folgate, Sussex, for a very handsome dish; 2nd, Mr. TUCKER. Five dishes were staged.

Orléans de Serres.—Five exhibitors. 1st, Mr. HUFFREYS; 2nd, Mr. ED. COLEMAN.

Blondeau Dubess.—This was the strongest of all the Pear classes, twenty-four dishes being set up by as many exhibitors. Mr. WOODWARD was a good 1st with a very fine and highly coloured dish; 2nd, Mr. W. LEWIS, gr. to R. H. B. MARSHAM, Esq., East Sutton Park, Maidstone.

Soleil.—This pretty little Pear was represented by five dishes, Mr. ROSS, gr. to Capt. CARSTIES, Newbury Park, Newbury, repeating his successes of previous years by winning the 1st prize; 2nd, Mr. T. NEALE.

Thompson's.—1st, Mr. HUDSON, gr. to LEONARD DE ROUSSILLE, Esq., Gomersbury House, Aton; 2nd, Mr. TUCKER. Nine exhibitors.

Winter Velis.—1st, Mr. CHALLIS; 2nd, Mr. CAMM, among nine exhibitors.

There was a class for any other variety not named above. Thirty exhibitors staged in this class, the 1st prize going to Mr. ED. COLEMAN, for Gansell's Bergamot; 2nd, Mr. W. T. STOWERS, for Duchesse d'Angoulême; 2nd, Mr. A. BASTIE, with Margaret Marillat. Good dishes of Beurre Alexandre Lucas, Marnate, Beurré Bachelier, Conseil de la Cour, and Marie Benoist, were also staged in this class.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

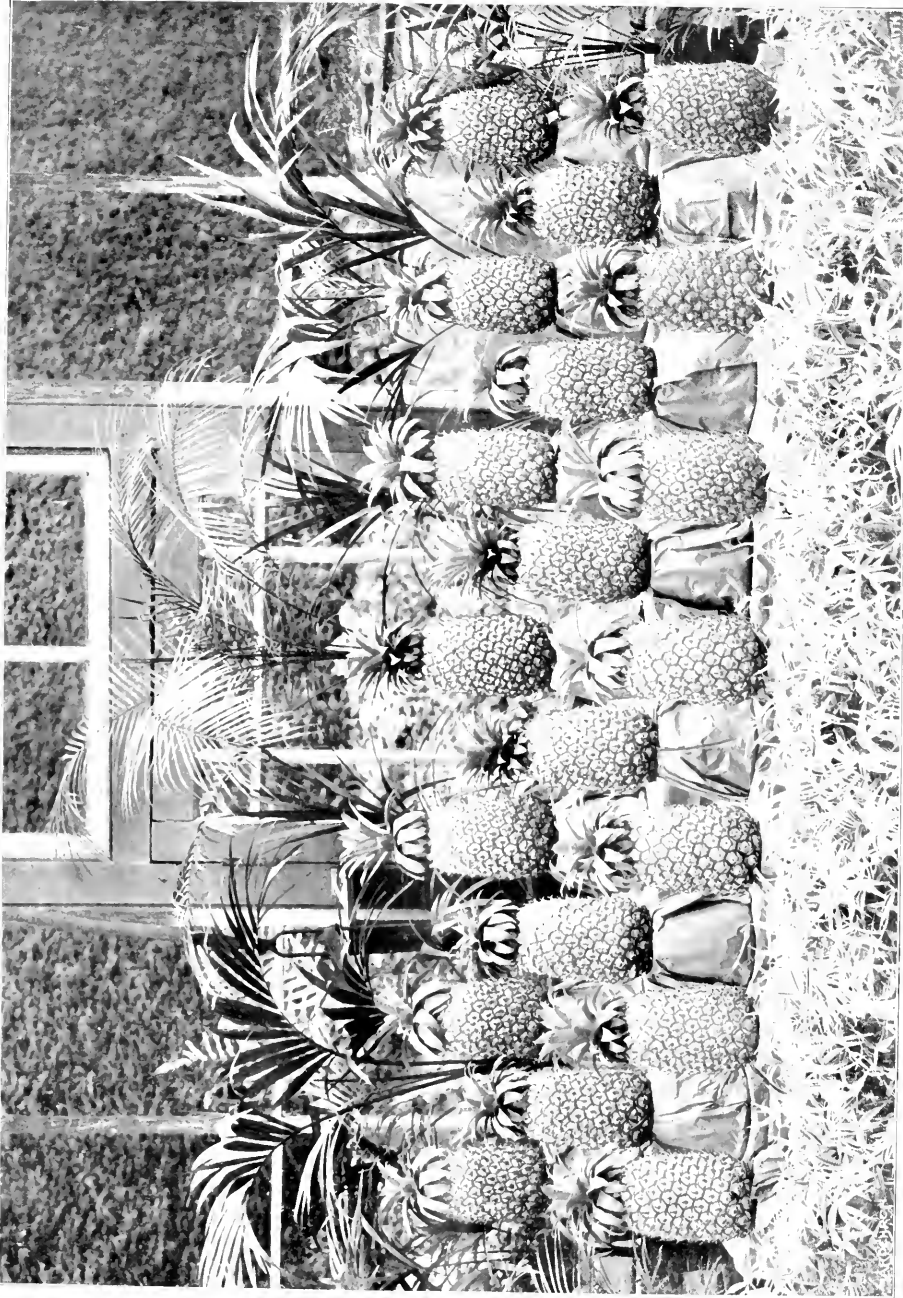
FELIX KAY, Esq., V.M.H.I., presided at the Annual Dinner of this Society on Wednesday evening last, at the Holborn Restaurant, London. He was supported by many prominent and well-known horticulturists, the company present being more numerous than usual. In advocating the interests of the Society, Mr. Kay drew attention to the very favourable report of the Actuary (Mr. Ackland), whose periodical examination of the books and funds of the Society proved conclusively its sound condition; at the same time Mr. Ackland contrasted the "United" in the most favourable manner with other recognised and well-known benefit societies. A pleasant and profitable evening was spent, and the names of several new members were announced, including ladies. Donations were made to the Benevolent and other funds of the institution.

For further particulars, our readers are referred to the Secretary, Mr. Collins, 9, Martindale Rd., Balham, S.W.

NATIONAL CHRYSANTHEMUM SOCIETY.

We are compelled to postpone the publication of this report to our next issue.

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GROUP OF PINE APPLES GROWN AT THE HENRIE, MEXMOUTH.

for example, in the collection of Henry Little, Esq., Baronshill, Twickenham, is a plant of *Laelio-Cattleya elegans* Littleiana, one of the finest in colour, which received a First-class Certificate in August, 1885. The plant was at the time of small size, and for some years was not divisible. At last two very weak and unpromising pseudo-bulbs were got off. This piece remained for over two years without showing any sign of growth, but at present it has a strong lead about an inch in height. In another instance, two shrivelled back-bulbs of valuable hybrids were actually rescued from the rubbish-heap. The one, *Laelio-Cattleya Ingrami*, is now about to flower, and the other is a sturdy little plant.

But in order to get the best results, my own experience teaches me that back bulbs, although they may be removed at any time or season when convenient, should always be hung up in the Orchid-house, or a dryish lobby, which is to be found in some gardens, and remain there till the starting of growth indicates that they are ready to avail themselves of some small quantity of material placed within reach, and putting them in very small baskets or Orchid-pans, and again suspending them in the house. I am of the opinion that to pot up and afford water to back bulbs on removal is very likely to destroy the incipient buds, more especially when they are removed at a time far distant from that of their natural season of growth, although cuttings of *Dendrobium*, *Thunias*, and other long-stemmed species, do not seem to be so badly affected thereby as the *Odontoglossums*, *Cattleyas*, &c. I should like to know the opinion of others on this subject, as it is an interesting and useful branch of Orchid-culture, and one on which many amateurs would like information.

I may say that Mr. Norman C. Cookson, of Oakwood, Wylam, who is a careful observer, and one of the cleverest propagators of fine forms of *Odontoglossum crispum*, after many experiments, and some failures, told me that his method of late years has been to suspend the old bulbs with a piece of matting from the roof of a warm and rather dry lobby between two of his houses. Here they never fail to start growth at some time or other; occasionally, pieces which have lost even the remotest buds at the base of the bulbs, just as they seem about to perish altogether, push out small growths and bulbs from the top of the old one. The lesson seems to be, never to throw away the back bulbs of Orchids until you are quite sure that they are dead. There is yet another matter relating to back bulbs of Orchids which I will refer to later, unless some of your correspondents ventilate it while conveying their experience on this subject, *James O'Brien*.

A MIDLAND GARDEN.

IN reference to the superiority of rain over other applications of water, Herr Buijsman, of Middelburg, in Holland, writes to me that he has made experiment upon the subject, and finds that the only advantage of natural rain is that it falls in drops; and, therefore, when water from a watering-can is made to do the same, it is equally beneficial. This may be so, but I hope Herr Buijsman will communicate to the public, through the *Gardeners' Chronicle* or otherwise, some particulars of his experiments. This gentleman is a botanist who has given special attention to the mounting of herbarium specimens. The plants are dried with great care, and dissections of the more

important organs, with seeds, young leaves, &c., are added to each specimen. Sets of medicinal, agricultural, or other plants so prepared, can be supplied to the public.

I took up the other day that quaint old poem, by Dr. Erasmus Darwin, *The Botanic Garden*, written in rhymed couplets of the epic or ten-syllable metre, and first published in 1781. It is not high-class poetry, but it is a remarkable book. Full of wild fancies and imaginings, sometimes musical, sometimes grotesque, it puts into verse, or explains in copious notes, nearly all the geology, botany, and physics of that day. The author was the grandfather of the illustrious Charles Darwin.

There seems to be just now a complete rage for books on gardening; not text-books, but such as combine utility with fancy or gossip, or entertaining narrative. Among those that I have seen, Mrs. Earle's *Pot-Pourri from a Surrey Garden* still maintains its place as one of the best; but as drawing-room books for the beauty of their pictures, it would be difficult to beat *Gardening for Beginners*, by E. T. Cook, or *Wall and Water Gardens*, by Gertrude Jekyll. The latter contains 120 full-page illustrations from photographs of the highest excellence. Many of them are extremely beautiful. The instructions for making the most of walls, ponds, and brooks are very clear, and very good reading.

It is surprising how much the beauty of Nature, so full of curved outline and minute detail, may be enhanced by human art with its straight lines and larger masses. The reason is simple. Beauty depends upon the perception at the same time of variety and of unity or relationship. Where the variety predominates we get picturesqueness; where the unity predominates we get symmetry; and if either completely overpowers the other, we have either chaos or monotony. A row of cheap houses, newly built, in a country lane, adds variety, but not unity, and the result is chaotic. But it is possible to build houses so tastefully designed that their forms harmonise at once with Nature, and intensify her beauty, and when her creeping-prays unfold the masonry so as to blend its straightness with her delicate curves, an exquisite beauty is revealed such as neither could have produced alone. To the same cause is due the beauty of lobed leaves, such as Oak, Sycamore, Vine, and Ivy. The lobing adds variety, and the more varied the lobes, the more beautiful is the leaf. The leaf of *Boeconia cordata* is an exquisite example of curved lobing, and that of *Bryonia dioica* of angular lobing. I notice that while some plants of *Bryonia* have the leaves deeply lobed, with the terminal lobe longer than the others, in other plants the lobes are shallow, as in the common Ivy. These latter plants are generally without flowers, and must, I think, be the seedlings of the year not yet mature. In some plants, the leaves become more deeply cut towards the extremities of the long branches, as in the Vegetable-Marrow, or when they spring from the older wood, as in *Ampelopsis* *Vitifolia*.

For the back row of a mixed border, *Campanula Rapunculoides* is a useful plant. It flowers freely, with tall spikes of large blue bells, a yard high, is perfectly hardy, and wants no attention beyond preventing it from spreading too far. It is not equal to

Campanula pyramidalis, but is a fair substitute, and requires much less care. *Galetia emmifera*, better known as *Hyacinthus emmifera*, is another handsome plant for back rows or for groups; but it is hardly as handsome as it might be. The elegant white bells should be larger, and more of them should be open together. Here is a good field for the clever "improver." Many plants which bear their flowers in elongating racemes have the same fault of opening only a few flowers at the same time. If they could be induced to keep the lower ones closed until the whole spike, or even half of it, was ready, the effect would be much more striking. Or if the lower flowers were more permanent, so that they would not wither before the upper ones expanded, the same result would be attained. It is this habit which makes the value of the Double White Rocket, the Rocket Larkspur, and the best strains of Hollyhocks.

The fruit crop has turned out fairly well this year. Some of my Pear trees are very full. I have just stripped a small bough 3 feet long which was broken off by its burden, and have gathered more than sixty fine Pears from it, weighing five to the pound. A large tree of the Louise Bonne of Jersey is so loaded that the boughs hang down on all sides, and the tree looks like a fountain of big brown drops. In Apples, the Irish Peach, which is the best of the early Apples ripe in August, was well loaded with fine fruit. Pearmain and Duchess of Oldenburg have, as usual with them, heavy crops. The Norman Wonders are few. I have two trees, but they have never done well. They are planted where a pocket of gravel comes near to the surface, and I think this injuriously affects the roots. Both trees are more or less enfeebled. Cox's Orange Pippin has a crop, but not a large one. Many Codlins, excellent cookers, were pretty plentiful, but small, no doubt from the dry weather.

Green Peas are perhaps the most delicious of all household vegetables. The season for them has now passed. It has been a short one this year on account of the drought. I think the nicest vegetable in the garden just now is a young hearted Cabbage-sprout. Where the spring Cabbage was cut off from, two to four sprouts shoot forth, and just now mine are at their best. They are tender, sweet, and flavoursome, and more attractive to me than Kidney Beans, which are always, to my taste, a little insipid. It is customary here, when a Cabbage is cut, to make two cuts at right angles to each other on the top of the old stalk to promote the growth of sprouts. Has this any real effect? After examining a number of the sprouting plants, of which some were cut while others were not, I am inclined to think that the effect is nil.

Vegetable-Marrows have a disagreeable habit of turning yellow and withering away without any apparent cause. Sometimes half of a long branch will go while the rest remains green. I have a plant now with a main stem eleven feet long bearing several side branches. I have cut some good fruit from it, but the terminal eight feet are now dying while the branches of the first three feet are still healthy. It is growing on a solid mound of soil and rubble, on the top of which a hollow was made and filled with about half a bushel of good soil and manure.

There is no external appearance of fungus on the leaves. The plant has been frequently watered, sometimes with liquid manure. What is killing it? Probably, low night temperature, &c.

A gentleman in this neighbourhood who has for many years had the management of a very large estate, informed me a few days ago that several young steers feeding on a rough hill-side, with a brook at the bottom, had all died unaccountably. The place had been examined by a botanist, but no poisonous plant had been found. The

importance, which should be exhaustively investigated by the agricultural societies.

Has anyone found a use for the runners of Strawberries? They ought to be cut off at least twice during the season of growth. I have been using the oldest and toughest of them for tying up the bundles of Onions to keep for winter. They seem quite adapted for this purpose. Could not the very tough fibre which contains be turned to other uses? This morning it was necessary to tie back an Arbovitæ which was hanging over

LIVISTONA AUSTRALIS.

We are indebted to the courtesy of Prof. Maiden, the Director of the Sydney Botanic Garden, for the accompanying illustration (fig. 87) of an East Australian Palm. It was planted in 1881 by H.R.H. the late Duke of Clarence, and was inspected with interest by the Duke of Cornwall on the occasion of his recent visit to the botanic garden. The species is also known under the name of *Corypha australis*. It is too tender for out-door cultivation here.

HERBACEOUS BORDER.

CHRYSANTHEMUM MAXIMUM "LORD ROBERTS."

The varieties of *Chrysanthemum maximum* have become so numerous that some discrimination is necessary in selecting only the best. The variety under notice is new, and one of the finest yet raised. It commences to flower about the end of the month of May, and continues till frost stops all further development. The blossoms are remarkable for their size, the diameter of a good specimen exceeding 4 inches, and the petals broader than those of the older forms; it is pure white, and the yellow disc is not large or conspicuous as in those. The plant succeeds in any garden soil if in good condition, and it is readily increased by division in autumn or spring.

TRITOMA (KNIPHOPIA) TRIUMPH.

This is unquestionably a welcome addition to *Kniphofias*. Flowering later than most of the older varieties, it possesses sufficient merit in this respect alone; but its flowers are attractive by reason of their unique golden-yellow colour. It is hardy, and of easy culture in any good garden soil, and the flower-shaft reaches a height of 3 feet.

OXOCHERIS SPYROSA ROSEA.

This variety is a fine addition to garden plants, for a large mass planted in the autumn of 1900 in light sandy loam was most attractive throughout the late summer, and is still making a brilliant display. It should be noted that the plant has beautiful rosy-pink flowers, an agreeable perfume, and it grows about 2 feet in height, is quite hardy, and succeeds in any good garden soil.

SOLIDAGO CÆSIA.

Solidagos are popularly known under the name of Golden Rods, and they are usually tall plants of vigorous growth. The variety *cæsia* seldom exceeds 2½ feet, and in general appearance it resembles *S. Shortii*. Its bright yellow flowers are freely produced on long, slender, dark purplish stems.

OXOCHERIS CÆSPITOSA.

At first sight this pretty species might be taken to be that well-known *Ox. cymia* (marginata), but an examination of the plant shows it to be quite distinct. Its leaves, unlike those of *cymia*, are lanceolate, deeply dentate or toothed, of a deep green colour, and tufted. The flowers are pinkish-white, about 1 inch across, with very long and slender calyx tubes, produced abundantly from early summer till late in the autumn, and they possess a pleasant fragrance that is most noticeable in the evening. It barely exceeds 12 in. in height, and is almost stemless. The growth is more vigorous than that of *Ox. cymia*, and its cultivation easier, succeeding in places where the other refuses to grow. The plant makes good growth in light, rich, sandy loam, as likewise in very heavy loam. Where *Ox.*



FIG. 87.—LIVISTONA AUSTRALIS (CABBAGE-PALM), GROWING IN THE BOTANIC GARDENS, SYDNEY.

stomachs of the cattle were examined, but there was no serious inflammation, and no poisonous seeds were there. He himself attributed the death of the steers to their having eaten freely the little yellow *Tormentilla*, which grows there abundantly, and which, though not poisonous, is very astringent, and might injuriously affect the stomach. This theory seems to me unlikely, the *Tormentilla* being a Rosaceous plant and very harmless, but I have no better theory to suggest. Several similar cases of cattle dying in the fields without apparent cause have come to my notice during the last twenty years. It is a matter of serious

importance, and some material was required the colour of which should be inconspicuous. It was found in the runner, 1 feet long, of a greater *Periwinkle*, which answered the purpose admirably.

I mentioned last autumn that the straight stiff stems of the Golden Rod made good stakes for tying up light things, such as Hyacinths, Wallflowers, and Stocks. I found them so useful, that I am reserving a small plantation of Golden Rod especially for this purpose, and reckon that I shall get from one to two hundred stakes this year. The old gardeners knew also how useful they are. Ed. F. T. Mott, F.R.G.S., Birstal Hill, Leicester.

eximia does not grow satisfactorily. I would recommend that this species be substituted for it, as in general appearance it greatly resembles that beautiful species. Seeds ripen freely in this country, and should be sown when ripe; moreover, the plant can be easily raised from root-cuttings placed in boxes filled with a light kind of soil, and kept in a cold frame until large enough to be planted in the border. The plant is a native of N. America, and was introduced about 1811. *E. S., Woking.*

BOOK NOTICE.

THE FLORA OF THE PRESIDENCY OF BOMBAY.*

A COMPREHENSIVE account of the botany of the whole Empire of India is provided by Sir Joseph Hooker's *Flora*. The immense scope of that admirable work, while making it eminently suitable for the botanical expert, renders it difficult of use by anyone whose education has not been specialised in the direction of systematic botany. For the preparation of provincial floras, the great work of Hooker forms an admirable basis; and, on this basis, it is intended to issue floras dealing with the plants of each of the provinces comprised in the Indian Empire, of a sort which shall be fitted for the use alike of the educated native inhabitants, and of the European officials and settlers. By the publication of the first part of Dr. Cooke's *Flora of Bombay*, the initial step has been taken towards the fulfilment of this admirable scheme.

Dr. Cooke, who was for many years Principal of the College of Science at Poona, retired from service in India some years ago; and, since his retirement, he has been devoting his energies to the preparation of a *Flora of the Presidency* of which he was for so long a distinguished ornament, and in which he amassed, at first as a private individual, and latterly as Director of its *Botanical Survey*, an extensive herbarium of beautifully preserved specimens.

The first part of Dr. Cooke's work has now been issued. In form it resembles Sir Joseph Hooker's *Flora of British India*, and like that work, it is being issued in parts. The natural families are treated in the sequence of Bentham and Hooker's *Genera Plantarum*, just as in Hooker's work. The indigenous species described in this first part number about 325, and they range from *Ranunculaceae* to *Udaceae*. Notices are also given of the most noteworthy naturalised plants which belong to these families. Some idea of the progress which has been made in acquiring a knowledge of the vegetation of the Presidency may be gained from the fact that this number exceeds by 130 the species of the same families described in the last published *Flora of Bombay* (that of Batzell), which was issued in the year 1861.

Dr. Cooke, in this his first part, has struck a high level of excellence which it is sincerely to be hoped may be maintained in the floras of the other provinces which are understood to be now in preparation. His descriptions are terse and graphic, and they are drawn up on the principle of comparing the same organ in the same sequence in each species. Excellent keys to the species are given, and also good keys to the genera, which will greatly facilitate the identification of plants by those (may they be many!) who use the book. If there be given with the concluding part of the work

equally good keys to the natural families, and also a copious glossary, there will remain no excuse for any inhabitant of the Bombay Presidency, of moderate intelligence and education, for not making himself acquainted with the name of any plant he may find growing wild within its boundaries.

A noteworthy feature in the work is the absence of most of the old and obsolete synonyms, which, however interesting and valuable to the systematic expert, are confusing and meaningless to the classes for whom these provincial floras are mainly intended. While, however, synonymy is thus curtailed, the date of the original publication of each species is given immediately after the name of its author. Notes on the vernacular uses of plants are given, and also vernacular names; and, in the description of every species, reference is made to Sir Joseph Hooker's *Flora*. Dr. Watts' *Dictionary of Economic Indian Products* is also freely quoted.

The book is published under the auspices of the Secretary of State for India, on the recommendation of Dr. Prain, Director of the Botanical Survey of India, and of Sir William Thiselton-Dyer, Director of the Royal Botanic Garden, Kew. It is excellently got up, and it is not unduly costly. In every way it is a publication in respect of which all concerned may be warmly congratulated.

UNPROFITABLE FRUIT-TREES.

IN many gardens there are some trees that are not bearing, and come under the above heading. Of course, some trees never can be made profitable, and to these I will only briefly refer. Some are so old, so cankered and worthless, that it is a pity to encumber the ground with such trees. Another instance of poor trees results from hard pruning of the top growth, and allowing the roots free play. To this point my note will refer. Many a time the pruning-knife has been too active on the top growth, and as a consequence, gross growth and few fruits. But one does not err always intentionally; in many gardens, ours among the number, the main walks have bush or pyramid trees along their sides. This adds to the appearance, and no harm is done, providing such trees have room (they often are crowded), and to keep them shapely they must be hard pruned. In many cases I have seen the trees cut back too early in the summer, with the result that they make a second growth, but few fruit-buds. It would be far better to thin out later, to ripen up the new wood and fruit-buds made, but the thinning does not make the trees so nice to look upon as when they are cut close over.

ROOT PRUNING.

What is the remedy? Well, doubtless root-pruning; and what are termed dwarf standards, if not too old. I do not include large standard trees in orchards, or in places where there is ample room for top growth. Given the latter, the roots may be allowed freedom. I am aware that even in orchards with this freedom there are failures, but they may arise from causes we cannot avoid, such as winds and weather, but we often see much better crops on large trees with ample freedom. For instance, some of the very strong growers do well as standards, but grow too much to wood in bush form. Others will not do well with severe pruning, and those that are of pendulous growth often bear on the points of the shoots. To cut these latter hard back means failure of crop.

The present is a good time to root-prune, indeed the earlier the work can be done

in the autumn so much the better. I would not delay the work even if the top-growth is still immature, as root-pruning now will do far more good than excessive top-pruning later. In all cases, and especially with large trees left for many years undisturbed, it may not be well to do all the work in one season. Half the roots may be cut this year, the remainder next. I am aware that to root-prune large trees involves time and a considerable amount of labour, but the latter will soon be repaid, say in one season's crop, when the trees are in healthy free-bearing condition.

The chief point is to do the work well (with large trees at least 3 to 4 feet from the stem must be allowed), and to form a good workable trench, so that it is possible to get well down under the roots, as those which are strong and with a direct downward tendency are the important ones. These should be cut with the mattock, and gone over afterwards with a sharp knife. In digging down, preserve all the fibrous roots possible, and when filling in the soil carefully spread out also other small roots in a slightly upward position. The soil for filling in should be from the top; if poor or deficient in lime, such addition as old mortar-rubble, burnt refuse, or wood-ashes, and good loam may be given to stone fruits, such as the Peach or Apricot. The new soil should be firmly rammed as the work proceeds, and also fairly dry, so that it does not clog. If the soil is very dry under the trees then water freely; indeed, if possible, well saturate the roots before root-pruning.

The above advice refers especially to trees in the open; wall trees need similar treatment, as they often fail from the same cause. Indeed, unless wall trees are given free extension, the continual stopping and cutting back cause barrenness, the roots getting low down, and a gross growth follows.

In the case of Apricots, I have seen these trees fail badly year after year when the roots have been too deep, and very good results have followed lifting when the trees are not too old. Some years ago we lifted a large number of trees that were on an east wall to a west one that had few fruits, but made gross wood—large trees too, and for years after they cropped grandly, but recently they made much wood, and are now undergoing the same process. Those too large to lift will be undermined, root-pruned, raised if necessary, and induced to make surface-roots.

With the Peach, Nectarine, and Plum on walls, root-pruning where lifting cannot be done is a necessity; these trees often make a gross growth after being in good soil three or four years. We have trees with 15 to 20 feet run of branches, only planted some six years ago, and a few have made very strong wood; these are now being taken bodily out of their positions, the gross under-roots cut, and the trees being slightly raised and new loam given.

I do not advocate mutilation, but advise that the trench be kept at least 1 yard from the wall, all fine roots preserved, and carefully spread out when replanting. Of course with larger trees root-pruning, not lifting, is advised. There is no need to expose roots longer than possible, and we find it is much better to lift or root-prune, and allow free extension of branches, than to prune top-growth hard to keep trees within bounds.

Plums grown on walls have when young a great tendency to grow too much to wood, and timely lifting will do much good. Some years ago we transplanted from one site to another some very large trees which rarely gave any fruit, but the transplanting did much good, as they have done well since. I am not a believer in

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letting any tree remain that fails to crop; and in gardens limited for space, unprofitable trees should not be allowed to remain long. G. Wythes.

CLIVIA MINIATA.

We are indebted to Mr. Humphrey, of Nash Court Gardens, Faversham, for the illustration of the very fine example shown at fig. 88. The plant measured 5 feet across, and represents the result of twenty years' attention.

a piece of ground near to Lewisham Junction Railway-station. Mr. Jones had made up his mind to acquire a collection of these useful autumn-flowering plants, and accordingly commenced to obtain them from every available source. Most people will be able to guess the result of this.

The correct nomenclature of the genus is not an easy matter, but the trials made at Chiswick a few years ago remedied much of the confusion, and enabled growers to see which were the best varieties; up

in time of blooming, that the buds had not commenced to open in the first week of October.

By careful selection of sorts, good cultivation and selection of aspect, it is perfectly easy to obtain flowers of these Asters from the middle of July until December, or until hard frosts put a full stop to vegetation generally.

Many of Mr. Jones' plants have been grown in pots, and they have succeeded well, the plants being bushy and of good size; but no



FIG. 88.—WELL-CULTIVATED PLANTS OF *CLIVIA MINIATA*, IN NASH COURT GARDENS, FAVERSHAM.

NURSERY NOTES.

PERENNIAL ASTERS AT LEWISHAM.

MR. H. J. JONES, of the Ryecroft Nurseries, Lewisham, it is well known, does not expend nearly the whole of his energies upon Chrysanthemum cultivation, but is rapidly developing a nursery business of a varied character. We were not surprised, therefore, to see the extensive collection of perennial Asters shown from his establishment at a recent meeting of the Royal Hort. Soc.; and since that date we have had the opportunity to make a hurried inspection of the plants from which these flowers were shown. They have been cultivated upon

to that time. Some of the species are distinct enough, others are not so, and it would further appear that the species readily cross with each other, and that there are hybrids that cannot be properly called by any specific name at all. In the question of variety also, there is much confusion; thus the collection at Lewisham, nominally consisting of about 250 varieties, contains perhaps 150 species and varieties, distinct enough from each other to be worth cultivating. Some of the varieties had passed out of bloom before we saw the plants, as *A. aris*, early varieties of *A. Ansellus*, *A. levis*, &c., which commence to bloom in August or earlier, but others varied so much

that Mr. Jones would not recommend their cultivation in pots in gardens, except the plants are required for decoration indoors, where they would perhaps afford a little variety to the Chrysanthemums. The Novi Belgii section includes some very useful varieties, amongst which are the following: Apollo and Autumn Glory, both having blue flowers; White Beatrice, about 4 feet high, distinct from Candidus; Superbus, 3 feet high, fleshy, very freely flowered, blooms pale lilac color, with reddish centre; Abbotts, white; White Spray, one of the prettiest; Purity, Ella, and John Wood (all white); Pearl Lyonnaise (existing under several names in as many different nurseries); Snowflake, W. Marshall, one

of the best of the pale blue-flowered varieties; Robert Parker, lilac-purple; Harpur Crewe, densus, Archer Hind, pale-rosy-lilac, &c.

The species *Noxa* Anglicæ has hairy stems and leaves. It contains some fine varieties that grow about 6 feet high, and seldom less than 1 foot. W. Bowman, purple, is one of the best of the section, but *Precoctæ*, *Precox*, and *Diadem*, of the same colour, are also very fine. *Diadem* has an advantage over the others, in that the flowers do not close so soon after sunset as they do. *Pulehellus* is a handsome variety, with pale magenta flowers. The best red variety is Mrs. J. F. Rayner; it is earliest and dwarfest. Other good reds are *Roseus*, rather taller and later than the preceding; and *Ruber*, with larger, deeper coloured flowers, and later still. The species *Acris*, with its early stellate flowers, is a grand plant, known to everybody, and we saw at Lewisham a pretty variety with pink flowers. *A. Amellus*, an Italian species, is dwarfier in habit than most of those already mentioned. The best variety is a very old one, viz., *bessarabicus*; the flowers have a bright golden-coloured centre. Other excellent sorts are *Riverslea* and *Framfieldi*. The last named variety has large-sized flowers, and blooms later than any other of the section. It was introduced by Mr. Norman Davis, of *Chrysanthemum* fame.

Other good varieties noticed were *A. versicolor* *Thetis*, a good, early-flowering Aster, with white or tinted flowers; *A. levis* *fornosissimus*, growing 2½ ft. high, flowers about the size of a halfpenny, colour violet; a variety called *Coombe Fishacre*, with beautiful spreading branches of flowers, plant 4 ft. through, flowers small, of pale colour, with high disc, and deep brown stamens; *A. paniculatus* *Claudius*, a bushy plant, 2 to 1½ ft. high, with myriads of small white flowers with yellow centre; *A. punicus* *lucidulus*, with pale lilac flowers 1½ ins. across; *A. vimineus*, a bushy species, 2½ ft. high, flowers white; *A. umbellatus*, very tall, flowers white, quite past now; *A. trincervus*, 3 ft. high, with long-leaves, flower-heads about 1 inch across; *A. Tradesanti* (white), rather early; *A. ericoides*, one of the latest to flower, very pretty; *A. diffusus* *horizontalis*, very spreading, white, with pink centre; *A. Thomsoni*, a very distinct species, with foliage almost like that of Sage, but the flowers similar to the *Amellus* type; and *A. Douglasii*, with rich purple flower-heads, which have no ray-florets; leaves heart-shaped, acuminate, serrated.

Mr. Jones thinks he can see directions in which the perennial Asters may be improved by cross fertilisation, and he is collecting the species for the purpose. But up to the present he has failed to secure the rare species *A. diplostehioides*, shown by Mr. Marshall at a meeting of the Royal Horticultural Society on September 25, 1888, when a First-class Certificate was awarded to the plant. Perhaps some of our readers may possess this distinct and rare species from the Sikkim Himalayas.

The Week's Work.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Ecton, East Bedfordshire, Devonshire.

Globe Artichokes.—In cold districts where it is not safe to expose the plants out-of-doors during the winter, some of the best and strongest of the off-shoots should be detached and dug up before much frost occurs; potting them in 8-inch pots with as much soil as will hang to the roots, and after affording water copiously placing them in a banked-up frame or turfen pit and keeping them close and shaded

for a few days. The plants should have full exposure in mild weather, and be matted over during hard frosts. The pots should be sunk in cocoanut fibre, tree-leaves, or coal ashes, at about 1 foot apart.

Trenching.—As plots become vacant, wheel on to them the requisite amount of manure, and trench 2½ to 3 feet deep, or 2 good spits deep, or bustard trench as the case may require, first having decided the nature of the next season's crop, and manuring accordingly or not at all. Heavy soils are the better for being dug in the autumn, and thrown up into ridges, so that frost, wind, &c., may pulverise and ameliorate them. With light sandy soil, the digging may well stand over for a couple of months, or even into the new year. No ground should be dug while in a very wet state. All weeds should be cleared off and burnt, or buried deeply, else they will prove a source of annoyance next summer.

Asparagus.—As soon as the growths upon old beds have thoroughly ripened, cut them down with the scythe level with the soil. Hoe and rake the surface of the beds, and remove all weeds and rubbish. As soon as there are frosty mornings, wheel on a top-dressing of half-decayed leaf-soil and manure, preferably that from a spent hot-bed. I do not believe in laying on the beds at this date such heavy dressings of rank manure as some advocate, especially on retentive soils, as it tends to keep the latter cold and wet throughout the winter. If newly-planted beds or seedlings of this year are still green, do not cut them down yet.

Scalade.—There is nothing gained by removing the foliage from the crowns while it is still green, but any decayed foliage and all weeds may be cleared away, so that sun and air may ripen the crowns. The crowns need not be raised until they are required for the forcing-house. The same remarks apply to *Rhubarb*.

Lettuces.—Plants about three-parts grown should be litted with small balls of soil attached, and be placed in cold pits or orchard-houses, keeping them near to the glass, and affording full ventilation except on frosty nights. Avoid much wetting of the heart and leaves, or decay will set in.

Tomatoes for fruiting during winter will require careful attention from this date onwards. Remove all laterals as they show, and about mid-day lightly brush over all flower-trusses with a camel-hair pencil, affording plenty of ventilation when the weather is suitable. No damping overhead should be practised, but walls, walks, &c., may be moistened once or twice daily. See the plants do not want for water at the roots, and afford them a dose of Clay's or some other fertiliser once a week. All usable fruits should be gathered from out-door plants, and placed on a shelf to ripen; and if frosts threaten pull up the plants that have much unripened fruit upon them, and hang them in a lateinery, and most of the fruits will ripen.

Mushrooms.—Beds spanned five or six weeks since should soon be showing a crop. Do not afford water to the beds unless it is really necessary, but keep the surfaces moistened every other day or so. No artificial heat will be needed just at present to keep the house 58 or 60°. In preparing manure for succession beds from November onwards, add one wheel-barrowful of soil to six of manure, instead of two, as advocated early in September. Out-of-doors beds must be well covered with mats and reeds to throw off the rain. Keep a watch for slugs or woodlice, or they will soon do much damage to the crop.

THE ORCHID HOUSES.

By H. J. CHAFMAN, Gardener to R. I. MEASTRES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Masdevallias.—The proper treatment of *Masdevallias* during the winter is very essential. The robust-growing section, to which *M. Veitchii*, *M. ignea*, *M. Davisii*, *M. Harryana*, and others belong, are not easily kept in good condition, for after a continuance of heavy fogs, wet weather, or cold winds, their

foliage may become spotted in spite of very careful attention. Upon the return of bright weather they then present a very poor appearance. My own experience teaches me that the spotting is generally caused by subjecting the plants to a lower temperature than they can withstand during periods of unfavourable weather, and by affording too much moisture in the atmosphere and to the roots of the plants. If drier conditions are provided, the plants rarely suffer any harm. The temperature of the house in which this section of *Masdevallias* are grown should not fall below 50° at night, even in cold weather. In the neighbourhood of large towns many fail to cultivate *Masdevallias* satisfactorily for this reason. Fire-heat should be used even in mild weather during the winter months, so that the ventilators may be opened a little occasionally. The more tender species, such as *M. Schlimi*, *M. polysticta*, *M. abbreviata*, *M. attenuata*, *M. caudata*, *M. triangularis*; the miniature species, such as *M. Estreade*, *M. Wagneri*, and those with grass-like foliage to which *M. simulata*, *M. trichetea*, &c., belong, should be placed in a position near the glass. The miniature kinds should be placed at the warmest end of the house, and care is necessary with these to prevent cold water dripping from the roof. It frequently occurs that drip falling on the plants growing in tuft-like clusters causes the whole of the leaves in the centre to damp-off at the base. Where drip has fallen into a plant sufficient to cause saturation of the potting compost, remove such plant into a warmer house, to enable it to regain its normal conditions.

M. tonarvensis is one of the most useful winter-flowering Orchids. If the plants have been growing through the summer months in the cool-house, remove them now to the intermediate-house, where the night temperature does not fall below 55°. Fumigate the plants at regular intervals, so as to keep them free from insect pests up to the time of the flower-buds commencing to expand, but not afterwards.

Pleurothallis scaphia.—The rare *P. punctulata* and other small-growing species do well in winter in a high position of the *Masdevallia*-house. Many of these flower through the winter months.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

The Winter Moth.—For many years the caterpillars of the Winter Moth, *Chimantobia brunnata*, have caused much loss of fruit, more, in fact, in Apples than any other insect pest. In warm and dry springs that favour the hatching of the eggs at an early date, if their ravages are allowed to go unchecked, the prospects of a good crop of fruit are soon destroyed, the leaves and blossoms curling up. The conditions of spring this year were not so favourable as in some years for early development, and the losses generally were not of a very serious nature, even where grease-bands had not been used in the previous autumn. In order to prevent the moth ascending the stems, bands smeared with some sticky substance should be placed round the stems at this date and up to the end of the present month. The female moth being wingless, or furnished with but the rudiments of wings, these bands act as traps, and should be adopted by every grower of Apples and Pears. The moth changes from the chrysalis state at this season and onwards into the winter, and creeps up the stems of the trees to lay their eggs in the crevices of the bark or any shelter afforded by the twiggy branches. Several sticky substances have found favour with cultivators, but that known as "Evesham Grease," which resembles cart-grease, is the favourite. "Horne's" is another good preparation, and instructions for applying the same are furnished with it, as well as grease-proof paper on which to smear the grease. The stems of old fruit-trees having thick bark may be smeared with these substances close to the ground to the width of 9 or 10 inches; younger

trees, on the contrary, should be surrounded with a band of grease-proof paper, and on this the mixture should be smeared, and a grease-band proper put over it. The paper should fit evenly and closely to the stem, otherwise the moths will find their way up without passing over the dressed surface. If a band be fitted as close as may be, and a fillet of tough elvy pressed around the upper border, filling every crevice, the band acts as another kind of trap for the winter moth and other pests. Etc. These bands must be kept in a sticky condition, the dressing being renewed when it has become dry from exposure. If a tree is supported by a stake, the latter should be smeared with tar or "grease," or it will afford a means for the moth to pass into the crown of the tree.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Loss of Peach-buds.—Several theories are advanced as to the cause of Peach and Nectarine-trees dropping their buds prematurely. Most cultivators, however, are of opinion that an early loss of foliage, either from a bad attack of red-spider or from dryness at the roots, are frequent causes. If the wood is not well matured, the foliage cannot well remain too long in a healthy green state, an early loss meaning imperfectly-formed buds and a faulty root-action. All the while the trees are being syringed twice daily and water afforded occasionally, their progress is satisfactory, but directly the fruit is nearly or quite ripe, syringing or damping down is usually discontinued, and the roots soon feel the difference. Unless the borders are mulched in some way, they are almost certain to crack badly, and the trees are more likely to suffer from want of water during a dull, sunless autumn than in brighter weather, and a border may become dry in such weather, if more slowly, by being overlooked. Examine the borders frequently, and apply water whenever the soil is approaching dryness, liquid-manure being supplied to those that are well filled with roots. In order to facilitate operations and to prevent the cracking of the surface, the border should be lightly picked over with a fork. In the case of trees growing too freely, rather less water should be applied at the roots, and a little fire-heat turned on, in order to maintain a drier air in the house. This will check late growth, and favour the ripening of the wood. When the trees are pruned, cleaned, and re-tied, it is a good plan to lay bare the surface-roots and top-dress them with a mixture of loam, Thomson's Vine-manure, and charred rubbish, into which the roots will penetrate before growth for the year ceases.

The Orchard House.—The planting and transplanting of trees should receive attention forthwith. Stone fruits in general thrive best in turfy loam, with one-sixth of the bulk formed of chalk, lime rubbish, plaster, &c., being careful to free these from pieces of wood; and if the soil is very adhesive, add road-scrappings as well as a good quantity of crushed steamed bones. If the soil be light, add clay to the amount of one-sixth part of the bulk, and let the whole be thoroughly mixed. Every fruit-tree border should possess a 3-inch tile drain, laid with a proper incline at the bottom, and provided with an outlet. Above the drain, and over the entire bottom, place a layer 9 inches thick of rubble, the coarsest at the bottom, and the finest at the top, finishing off with lime-rubbish or chalk. A border should be 2 feet deep and 6 feet wide, and the compost should be trodden firmly. The best varieties of Cherries are Black Tartarian and May Duke, but the yellow Cherries are agreeable additions to the dessert; and of these, Elton and Governor Wood are excellent varieties. The roof-lights being now removed, they need not be replaced for a month. Remove the old surface soil without doing harm to the roots, and replace it with a fresh compost, that given above, answering well. Trees in pots that require larger sizes should be shifted without

delay, and those not requiring repotting should be turned out of the pots, and a few inches of soil from the base removed, cutting back the roots, and supplying fresh compost and good drainage. The surface should be removed, and new compost afforded, making it firm with a rammer, and finish with a mulch of good manure. Avoid water, and place the trees where they can have plenty of air.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwood Hall, Loughborough.

Cyclamens.—Remove the plants to a house having a warmth of 55, and place them very near to the glass. Many of the plants will be throwing up bloom abundantly; these early plants should be afforded once a week diluted liquid-manure, and a buoyant air should be the rule in the house, air being freely admitted in fine weather, so as to avert the spindling of the flower-stalks. Prick out the seedlings as soon as they are in a condition to be handled, and place them in a close frame with a warmth of 50 to 55.

Tree Carnations.—So far, here, these plants have been afforded protection under portable lights, but where a house can now be set apart for them, a temperature of 50 to 55 maintained therein, and a free circulation of air afforded, it will be better to remove them from the temporary shelter. The plants should be well rooted at this date, and that being the case, Clay's manure, soot-water, or farmyard manure-water in a diluted state may be afforded. Vaporise the house frequently as a preventative of insect attacks. Use much care in applying water to the varieties of C. Souvenir de la Malmaison; let a small volume of air enter the house at night, and open the ventilators to the full extent on fine days. A temperature of 45 to 50 may be maintained without any aid from fire heat. Marguerite-Carnations require now the protection of a frame, and the same kind of attention in applying water as the other varieties.

Pits and Frames.—Poinsettias, Justicias, Eranthemums, Libonias, Gardenias, and Centropogons [which have up to date been accommodated in frames, must be removed to a house having a warmth of 55 to 60. Plumbago rosea and Euphorbia Jacquiniifolia will be the better for a temperature 5 higher than the other plants mentioned, affording the last two all the sunlight possible. Weak manure-water will be beneficial to most or all of them. Let the forcing be gradual, nothing being gained by undue haste, and the flowers will probably be the more acceptable after the glut of Chrysanthemums is over.

Begonia Gloire de Lorraine.—Make a selection of the forwarder plants, and place them close to the glass in a house of 60 to 65 warmth, so as to command a good display a month hence. Cease to pick off the flowers of this early batch, and afford tepid liquid manure-water once a week. The flowers on later batches may still be picked off. Wire baskets filled with these Begonias have a capital effect.

Mignonette. The plants hitherto standing in cold frames and pits should be removed to the greenhouse and allowed to develop their flower spikes, applying weak manure-water occasionally. In affording water to Mignonette at this season and during the winter, a small-spouted pot should be made use of, so as not to wet the foliage or stems. The surface of the soil should be stirred occasionally, and the pots kept well cleansed. The plants of lesser age should likewise come into the greenhouse and be placed upon shelves near the roof, where they will not get drawn. The plant requires plenty of ventilation, otherwise it soon gets weak and sickly, and flowers but poorly.

Geraniums. Afford these plants manure-water in a much diluted state about once a week. Stake out the new growths, and stand the plants in the stove in positions where full sunlight can be accorded them.

THE FLOWER GARDEN.

By T. H. STAMP, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Tuberous Begonias may be lifted after the first frost, and be placed in cold frames or houses, where the stems and leaves may gradually ripen before the tubers are stored away for the winter. When the tubers are sufficiently dry to be cleaned, they may be placed in single layers, or in layers of two or three in depth, with some cocoa-nut fibre refuse among them to prevent shrivelling. In this district, at the time of writing, the plants were in full flower.

Violets.—Plants in beds or borders intended for flowering in the open should be freed from weeds, and all runners or leaves that may have collected around them. Double varieties, if not growing in such a place, may be lifted and planted at the foot of a south wall or other sheltered spot. They will be useful if the whole stock cannot be placed in frames.

Roses.—The making of alterations, forming of new beds, or re-arrangement of the plants, may soon be undertaken. The site for a rosary should, as most gardeners know, not be over-lying with trees, or have large trees and shrubs in proximity to the beds. Whilst trees and large shrubs are not to encroach upon the Rose garden, it should not be exposed to sunshine on all sides, particularly if the Teas and Hybrid Teas are largely grown, as the sun spoils the flowers quickly. This applies to southern gardens more particularly. In the midlands and the north free exposure does good. In the west the thin blooms of some varieties last longer if the beds are shaded by trees or buildings during part of the day. There is much to be said for having a rosary apart from the rest of the garden.

Soil for Roses.—If the natural soil is too light for Roses add to it some good pasture loam, if possible, and trench the soil, incorporating the manure well as the work proceeds. Some soils are the better for the addition of light material to it; the top spit of a pasture, if it consists of good loamy soil, gives the best results. For the Teas a medium soil appears the best for growth and bloom. Bone-meal should be added to the beds if the soil be poor.

Varieties.—If a rosary is of circular form, and a summer-house or temple is constructed at the boundary, the beds in the middle of the area should be filled with dwarf plants, and standards, if any, planted at suitable distances apart at the back of the outer beds; this will give the rosary the appearance of being lower in the middle than at the boundary, and if the whole is enclosed with a hedge of evergreens, a good finish will be put to the whole. This hedge should be placed 8 to 10 feet distant from the beds, the space between the beds and the hedge being turf or gravel. Standards of a pendulous form are pretty objects when standing on grass; some of the semi-climbing varieties are best for this purpose, such as the Noisettes, &c.

Varieties.—It is more satisfactory to plant each bed with one variety. Good varieties for cutting or display are: Teas; Dr. Grill, salmon-yellow; Perle des Jardins, yellow; Aman Cochet, bluish, varying in tint; Marie Van Hantre, pale yellow, one of the best; Madame Lambert, pale yellow. Hybrid Teas: Clara Watson, a finely formed flower, of a deep flesh colour; Aurora, pink, a sturdy grower; Grace Darling, Caroline Testout, a first-class Rose, early or late in the season, producing large quantities of bloom, and probably the best all-round variety of recent introduction; a yellow variety possessing the good qualities of this Rose would be an acquisition. Of H.P.'s: Mrs. Sharnun Crayford is a fine pink, smooth, clean of growth, but seedless; a good Rose. A perusal of the numerous Rose catalogues now coming to hand affords the buyer plenty of choice, but a visit to a nursery is better. The plants have been very free from mildew this season, and at the time of writing there are plenty of flowers on them.

EDITORIAL NOTICES.

Illustrations.—The Editors of *The Gardener's Chronicle* are glad to receive photographs of flowering plants, suitable for reproduction in articles, or of available plants, flowers, trees, &c., of which they are desirous to reproduce for use in the paper.

SALES FOR THE ENSUING WEEK.

EVERY DAY.
Potted Bulbs, by Pollexfen & Co.
EVERY DAY (except Tuesday).
Potted Bulbs, by Protheroe & Morris.

MONDAY, OCTOBER 21.
As 12 Potted Bulbs, Roses, Plants, &c., at 5 P.M., Trade Sale of 19,000 Lilium longiflorum, by Messrs. Johnson, Dymond & Son, at the CITY ANCHOR ROOMS, Gracechurch Street, E.C.

TUESDAY.
Potted Bulbs, at 12 o'clock, Japan Lilies, at 5 P.M., by Johnson, Dymond & Son.

MONDAY, OCT. 21, and WEDNESDAY, OCT. 23, at 12 noon.
Lilies, Azalea indica, and mollis, Lily of the Valley, for forcing, Roses, and Plants, Flowering Bulbs, also 50,000 Lilium longiflorum at 2.30, Pansies, &c., at Stevens' Anchor Rooms, 38, King Street, Covent Garden.

TUESDAY.
Nursery Stock, Breerton, Ripely, at 11 a.m., by Protheroe & Morris.
Potted Lilies, &c., by Pollexfen & Co.

WEDNESDAY.
At 5 p.m., Lilium longiflorum, by Protheroe & Morris, Bussey Valley Nurseries, Redhill, at 4.30 a.m., at 2 p.m., and Freehold Nurseries, Southwold, Goodland, at the Market, 2 p.m., by Protheroe & Morris.

THURSDAY.
Nursery Stock, Holland's Nursery, Southwold, at 12 noon, by Protheroe & Morris.
Orchids, John Cowan & Co., Trades Hall, Glasgow, 12 noon.
Lilies, &c., &c., by Pollexfen & Co.

FRIDAY.
Cordoned Orchids, at 12.30, by Protheroe & Morris.

SATURDAY.
Nursery Stock, West Walk, on at 11.30, by Protheroe & Morris.

For further particulars see our advertisements.

AVERAGE TEMPERATURE FOR THE ENSUING WEEK, deduced from Observations of Forty-three Years at Chiswick = 38.4.

ACTUAL TEMPERATURES:—
LONDON.—October 16 (6 P.M.): Max. 59; Min. 51; October 17.—FINE.
PROVINCES.—October 16 (6 P.M.): Max. 55; Southern Counties: Min. 47; Ireland.

His MAJESTY'S printers have lately issued, at the low charge of 1d., a Parliamentary paper on the above subject, a brief synopsis of the contents of which will doubtless be appreciated by the reader. The places referred to are as follows: Bushby Park, 777 acres; Green Park, 53; Greenwhich Park, 161; Hampton Court Green, 17; Hampton Court Park, 453; the Gardens, 51; Holywood Park, 600; Hyde Park, 352; Kensington Gardens, 270; Kew Gardens, 290; Lillithgow Park, 17; Regent's Park and Primrose Hill, 337; Richmond Park, 1914; Richmond Green, 10; St. James's Park, 91; total, 5453 acres.

The total cost of new works on and maintenance of these "lungs" amounted in 1890-1900 to £102,499 for new works, and £104,503 for maintenance. The grand total from 1830 to 1900 shows that £463,683 was expended on new works, and £902,978 on maintenance in the places named above.

As regards expenditures in Ireland, we learn that the Phoenix Park, of 127 acres extent, cost in new works last year £508, and in maintenance £6711; St. Stephen's Green Park, of 22 acres extent, cost in new works £383, and in maintenance £1274.

The Glasnevin Botanic Gardens, Dublin, of 35 acres extent, with £30 for new works, and £168 for maintenance, the grand total for the expenditure since 1830 up to 1900 amounts to £18,760.

The total charges for Kew Gardens during the ten years 1890—1900 amounted to £262,665; but it is needless to comment on

the exceptional and great work done here—the enormous benefit radiating from it to every British colony and possession. For the nonce it ought to be noted that the salaries of bailiffs and assistants in the various parks, &c., are not given in this paper; so that to this extent (which is probably a considerable one), the statistics are incomplete.

The return is professedly made to only include parks "maintained from votes of Parliament in Great Britain and Ireland," and botanic gardens in London and Dublin only.

Parks and gardens under the charge of the county councils, universities, colleges, and other semi-public bodies, are not included in this governmental return.

JUGLANS CORDIFORMIS (see Supplement).

In recent years this Japanese species—originally described and named by MAXIMOWICZ in 1873—has been sent out by some of the continental nurserymen, and it promises to be a very handsome tree. The leaves are often over 2 feet long, and carry about fifteen oblong leaflets, the largest of which are close on 6 inches in length, and over 2 inches wide; they are covered beneath, especially on the veins, with a rusty coloured down. The male catkins are 12 inches, or even more long, tail-like and pendent, and closely set with small green flowers. One of them is represented on the left-hand side of Mr. W. G. SMITH'S drawing. Being produced very freely in May, they give the tree at that time a very striking appearance. The female or nut-bearing catkins are less than half as long, and bear from seven to twelve flowers. This tree is similar to *J. Sieboldiana* in foliage and habit, but differs in its curious nuts, which are flattened, tapered at one end, and somewhat cordate at the base. They have formed on the tree at Kew, from which the illustration was made, but have never matured. Judging by young specimens, this Walnut seems likely to thrive in this country; its fine foliage, long male catkins, and striking racemose clusters of fruits (if they form), will render it a great acquisition. *W. Beal*. [We intend shortly to insert articles on the various species of Juglans, from the pen of Mr. W. J. BEAL, of the Royal Botanic Gardens, Kew.]

SPREADING SILLY RUMOURS.—It is a pity people will propagate a rumour before taking any means to ascertain its truth. Reports have reached us recently concerning a well-known gardener and steward in a London suburb, and a head gardener in Gloucestershire. Both of these gentlemen are trusted servants of their employers, and neither is about to vacate his situation. Such rumours are apt to be mischievous as well as vexatious.

RECENT CHANGES IN THE KEW STAFF.—The changes that have resulted from the succession of Mr. W. WATSON to Mr. NICHOLSON'S position, and of Mr. J. M. HILLIER to Mr. JACKSON'S post are set forth in an appendix to the *Kew Bulletin*, which contains a list of the staffs in the botanical departments in Britain, India, and the Colonies. The following is the present staff at Kew:—Director, Sir W. T. THISTELTON-DYER, K.C.M.G.; Assistants (office), Mr. H. B. W. PEARSON, M.A., F.L.S., Mr. JOHN ALKMAN, Mr. William Nicholls Winn; Keeper of Herbarium and Library, Mr. William Botting Hemsley, F.R.S.; Principal Assistant (Phanerogams), Dr. Otto Stapf, A.L.S.; Principal Assistant (Cryptogams), Mr. Geo. Massee,

F.L.S.; Assistants (Herbarium), Mr. Nicholas Edward Brown, A.L.S., Mr. Robert Allen Rolfe, A.L.S., Mr. Charles Henry Wright, A.L.S., Mr. Sidney Alfred Skan, Mr. Thomas Archibald Sprague, B.Sc.; Assistant for India, Mr. Stephen T. Dunn, B.A., F.L.S.; Honorary Keeper, Jodrell Laboratory, Dr. Dukinfield Henry Scott, F.R.S.; Keeper of Museums, Mr. John Masters Hillier; Assistant (Museums), Mr. John H. Holland; Preparer, Mr. George Baddeley; Curator of the Gardens, Mr. William Watson, who entered the gardens as Foreman in 1879, and became Assistant Curator in 1886, with charge of the indoor department, which he still retains as Curator; Assistant Curator, Mr. William J. Bean, who now takes the general charge of the outdoor department; Foreman—Herbaceous Department, Mr. Walter Irving; Greenhouse and Ornamental Department, Mr. Frank Garrett; Arboretum, Mr. William Dallimore; Tropical Department, Mr. Walter Hackett; Temperate House, Mr. Charles P. Roffill.

ROYAL TRADESMEN.—We learn from Messrs. Wm. FELL & Co., Worthworth Nurseries, Hexham, that the firm has received a Royal Warrant appointing them seed merchants and nurserymen to His Majesty the KING.

THE LATE MARTIN HOPE SUTTON.—We are requested to state that Mr. MARTIN JOHN SUTTON and other members of the family of the late Mr. MARTIN HOPE SUTTON, finding it impossible to answer individually the many hundreds of letters received from all parts of the country, desire to express their grateful appreciation of the sympathy with them evinced in their recent bereavement.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At a recent meeting of the Chambre Syndicale des Horticulteurs Belges and of the Société Royale d'Agriculture et de Botanique, of Ghent, the following awards were made. Certificates of Merit for *Kentia* species, from M. AD. ALLOUXIS (*à l'unanimité*); *Cactus Dullias* (*par acclamation*), and *Cactus Dullias* "Captain Broad," from M. A. GALLET. Certificates for cultivation and flowering for *Eupatorium odoratissimum*, *Lapageria rosea* (*à l'unanimité*), *Caryopteris mastacanthus*, *Hedy-chium coronarium*, and *Salvia splendens* compacta, all from M. F. VAN DRIESCHKE; for *Veronica atropurpurea*, from M. CH. GAZELLE; for *Aecia longifolia phlebotrypha*, *Aecia floribunda* (seedling variety), *Abutilon* "Boule de Neige," and *Aecia longifolia phlebotrypha*, all from M. F. VAN DRIESCHKE. In the second section, Certificates of Merit were allotted for *Odontoglossum crispum* var. *Fred*, from M. FL. CLAES; *Laelia prestans bella*, L. *Cattleya Gottaiana Moortbeekensis* (*à l'unanimité*), *Cattleya Harrisoni Rouseleana* (*à l'unanimité*), *C. labiata autumnalis* var. *Arthur Van den Heede*, *Laelia prestans pumila alba* (*à l'unanimité*), *Cattleya aurea* (*par acclamation*), *C. Loddigesii alba* (*par acclamation*), *Laelio-Cattleya Massangeana* (L. *grandis* tenebrosa - C. Schilleriana), *Cattleya Parthenia rosea* (C. *flabriata* x C. *Mossiae*), C. *Hardyana* var. *Roseleana* (*à l'unanimité*), *C. labiata autumnalis* var. *Lucienne*, *Laelia prestans* "Queen Alexandra" (*par acclamation* et avec félicitations du Jury), *Laelio-Cattleya Norma Holmes* (L. *purpurata* - C. *Schilleriana*), and *Laelia prestans rosea*, all these Orchids from the Marquis de WAVRIN. Certificates for cultivation and blooming were awarded for *Oncidium racemosum*, from MM. VEEDENCK; *Miltonia spectabilis* var. *Moreliana*, and *Cattleya Harrisoni*, from the Marquis de WAVRIN. A Botanical Certificate was allotted for *Laelio-Cattleya Binoti* (L. *prestans pumila* - C.

bicolor), from the Marquis de WAVRIN; and Honourable Mention for *Cattleya gigas*, from M. FL. CLAES; C. Gaskelliana var. perfecta, C. dubia, *Laelia prestantis*, Lindenii, and *L. prestantis* bijon, from the Marquis de WAVRIN.

POLYGONUM LANGIERUM.—This plant is grown at Kew forms a very bold and striking plant for isolated beds where there is plenty of space. It is 3 to 4 feet high, with thick, cane-like stems, and large, lanceolate leaves of a silvery-white colour.

RHUS TOXICODENDRON.—The following letter from Lameston, Tasmania, will be read with interest:—

"It will be interesting to you to know that the thanks of several persons here are due to you for publishing letters in your issues of June 2 and 9, 1900, on *Rhus toxicodendron*, also to Mr. F. C. Cook, Secretary of the Royal Horticultural Society. Please allow me to thank him through the *Chronicle*, if possible. The facts are as follows: A lady in this place has for many years been troubled with eczema, and had to keep her room for a considerable time every year. One of my men also had several bad attacks, also several others. I, myself, at the time the *Chrysanthemum* came to hand containing the letters, I got it, and the plant was completely cured, and the other very nearly so, the eruptions on other parts of the body were cleared. A few days previously had been getting away a good deal of the *Rhus*.—On reading the letters, I had every particle of the plants destroyed. Since then, twelve months have passed, and there has not been the slightest sign of eczema; good posture, I feel it, and the plant was cured, although it was not the best cure, or the best amongst them. The lady here, and two others who were affected, were only troubled with the eruption at the time the leaves of the plant were being used with *Chrysanthemum* by despatch. A. CHAMBERS."

CHRYSANTHEMUM SPORTS.—Mr. LANGE, of the Handsworth Road Nursery, Hampton, sends us a single plant with four separate stems, each terminated by a single bloom, and bearing respectively yellow, bronze, pink, and white flowers. The variety is *Gustav Grunerwald*. The variation is in colour only.

ROOT AND VEGETABLE SHOW AT COGGESHALL.—We have received a schedule of prizes offered by Mr. J. K. KING, at his "Royal Root Show," which will be held at Coggeshall, Essex, on Tuesday, October 29. This root show is one of the largest in the kingdom, and a sum of more than £100 is offered in prizes for roots, cereals, vegetables, and Potatoes. The Great Eastern Railway Company will issue return tickets at single fares from all stations on their line, and will also run a special train for the convenience of visitors from Hertfordshire. The Chair will be taken at the Luncheon by J. ROTSD, Esq., M.P., supported by several members of Parliament, land-owners, and tenant-farmers. It appears from the schedule that the vegetables, cereals, and roots in the various competitions, amounting forty in all, consist of Mr. KING'S "own" selections or raising.

KEW.—Go when one may, there is always something attractive or interesting to be seen in the gardens. Just now No. 15, the tropical aquatic house near the end of the Palm house, is specially worthy of a visit to inspect the numerous Gourds now ripening their fruit. Among these are *Benincasa hispida*, with huge, grey, club-shaped fruits; *Lagenaria enormis*, *Momordica cochinchinensis*, with very large ovoid fruits of a bright red colour and studded with awl-shaped spines; the *Sikkim* Cucumber with brownish fruit; *Trichosanthes anguina*, *Lagenaria leucantha*, *Luffa acutangula*, *Benincasa cerifera* and others remarkable for the oddity of their form or the brilliancy of their colour. The most attractive plants in the show house No. 1, just now, include among their number *Aster levigatus* in pots, *Abutilon Savitzii* with green leaves margined and mottled with white; *Cuphea micropetala* with dark green lanceolate leaves, and spikes of

yellow, tubular flowers, each about 1½ in. long; *Salvia azurea*, blue, and *S. splendens*, scarlet; Ivy-leaved *Pyralagonium*, *Souvenir de Charles Turner*, with glowing pink flowers; *Angelonia salicariifolia* with white flowers; *Solanum integrifolium* with bold foliage, and ovoid obtuse red berries the size of a bantam's egg; and very many more which we have not space to enumerate.

ROSE ARRANGEMENTS.—A Conference on Roses, together with an illustrative show of flowers, will be held on Wednesday and Thursday, June 25 and 26, 1902, at Holland House, Kensington, by the kind invitation of the Rt. Hon. the Earl of LICHFIELD, by the Royal Horticultural Society. This meeting will take the place of one of the ordinary fortnightly shows at the Drill Hall, and all classes of plants, flowers, and fruits may be exhibited. Application for space to exhibit miscellaneous groups of any kind must be made to the Secretary, 117, Victoria Street, not later than Wednesday, June 18. Single plants, flowers, fruits, &c., shown for Certificate, may be entered as late as Monday, June 23. Miscellaneous groups must not include any Roses whatever, which may only be shown under this schedule. The dates are provisional, subject to the date to be fixed by the KING'S Corporation.

ARRANGEMENTS, WEDNESDAY, JUNE 25.—11 A.M., Fruit Floral, and Orchid Committees meet; judging commences. 12 noon, Council meets. 12.30 P.M., Exhibition open to Fellows and Ticket holders. 1 P.M., The Council will entertain the committees and other invited guests at luncheon. 2 P.M., The show opens to the public. 2.30 P.M., Conference assemblies.

CONFERENCE. The Conference will assemble as nearly to 2.30 P.M. as may be, and will be open to all Fellows and visitors. The very Rev. the Dean of Rochester, D.D., has been invited to act as President of the Conference. The following rosarians have been invited to take part in the proceedings, of which a full and verbatim report will be published in the *Society's Journal*: Professor L. Bailey, Cornell University, U.S.A.; Prof. Francis Copin, Brussels; Prof. M. J. Gouan, Versailles; Prof. Sargent, Cambridge, U.S.A.; Mons. Maurice de Vilmorin, Paris; Mons. Viviani-Morel, Lyons; Mr. J. G. Baker, F.R.S., V.M.H.; Mr. C. E. Cant, Mr. Frank Cant, Mr. W. F. Cooling, Mr. Alexander Dickson, Rev. H. Honeywood D'Ombrian, M.A., V.M.H.; Miss Anne Dorrance, U.S.A.; Rev. A. Foster-McHale, M.A.; Mr. George Gordon, V.M.H.; Mr. W. Botting Housley, F.R.S.; Dr. Henry; Miss Jekyll, V.M.H.; Sir George King, K.C.L.F., F.R.S., &c.; Mr. E. B. Lindsett; Dr. Maxwell T. Masters, F.R.S.; Mr. Edward Mayley, F.R. Met. Soc.; Mr. Geo. Mount; Mr. Geo. Nicholson, V.M.H.; Mr. O. G. Orpen; Rev. F. Pags-Roberts, M.A.; Mr. Geo. Paul, V.M.H.; Mr. Wm. Paul, V.M.H.; Rev. J. H. Pemberton, M.A.; Mr. A. E. Prince; Mr. A. Tate; Miss Willmott, V.M.H.

The provincial shows of the National Rose Society will be held at Exeter and at Manchester, whilst the metropolitan show will, it is expected, be again held in the Temple Gardens.

BEGONIA "PRESIDENT CARNOT" should find a place in any warm greenhouse. It produces a profusion of pendulous flowers of large size and a rosy-pink colour. Trained on a rafter, as it may be seen at Kew, it forms a very lovely object.

"**JOURNAL D'AGRICULTURE TROPICALE.**"—The second number of this publication includes contributions from M. DELOME POISSON, on Cas-

tilla Tunii; CH. RAVIERE and J. VILBOCQUE-VIATCH, on reasons why the Algerian Fibers elastic do not yield enroulement; Dr. WEBER, on Mexican Agaves; M. P. MAIN, on NIXTOLSON'S Rice Decorticator; also on the Future of the Sugar-cane, Commercial Cultivation of Camphor, and other agricultural and economical notes.

MEMORIAL TO THE LATE MR. R. D. BLACKMORE, M.A., late Scholar of Exeter College, Oxford, author of *Lorna Doone*, &c.

RICHARD DODDRIDGE BLACKMORE.

DEED JANUARY 20, 1900.

A STRONG, calm, steadfast, single-hearted soul,
Sincere as Truth, and tender like a maid.

He lived as one whom nothing could persuade
From righteous and manly self-control.
Bright, and limber, and the rhythmic roll
Of antique lore, his fertile juices sway'd,
And with their various eloquence array'd
His sterling English, pure and clean and whole.

Fair Nature mourns him now, as well she may

So apt a pupil and so close a friend;

But what of us, who through his loving day

Knew him at home, and loved him to the end

One thing we know: that Love's transcendent name

Is linked with his, and with his honour'd name.

This sonnet is by the late Mr. R. D. BLACKMORE's old friend, Mr. ARCHIBALD MACAY, and is reprinted by his kind permission, and that of the Editor of *The Athenaeum*, who published it on February 3, 1900.

"I have been asked to act as hon. secretary and hon. treasurer of a fund to be raised with the object of placing a Memorial of the late Mr. R. D. BLACKMORE in Exeter Cathedral, and, having known Mr. BLACKMORE intimately for nearly thirty years, and enjoyed the great privilege of his hearty friendship, I need hardly say that in accepting the position I do so with the feeling that whatever work it may entail will indeed be a 'labour of love.' It is probable that the subscription fund will be more than sufficient for the erection of a suitable Memorial in Exeter Cathedral, and I have proposed, with the sanction of Mr. BLACKMORE'S representatives, that any surplus should be invested for the benefit of the Author's Benevolent Fund, which has recently been established in connection with the Society of Authors, R. B. Winstanley, St. Dunstan's House, Fetter Lane, London, E.C.4."

PRUNES IN OREGON.—A trustworthy report on this fruit places the crop for the present season at 8,000,000 lb. The total for the other sections has not yet been arrived at.

PRESENTATION.—On the occasion of the annual flower and vegetable show at Tynningham, East Lothian, recently, Mr. BLACK, gr. to Sir ARCHIBALD HEIBURN, Bart., Smeaton-Hopburn, was the recipient of a handsome timepiece, presented by the members of the society to mark their appreciation of his long services, he having acted as judge no fewer than forty times. Lady GRIZEL B. HAMILTON made the presentation.

ANTIRRHINUMS.—One of the most effective and pretty beds at Kew at this late period of the season is constituted by dwarf Antirrhinums of varied colours. Such a bed would be very suitable for the forecourt of suburban villas.

HIBISCUS MOSCHEUTOS.—MRS. S. LADHAMS, of Southampton, obligingly send us flowers of this very striking shrub. The leaves are ovate-acuminate, downy beneath, and entire, or with only a slight indication of lobing. The flowers are 6 inches across, Mallow-like, pinkish, with a crimson eye. It is a native of the eastern states of N. America, from Massachusetts to Florida. It is a very old plant, but rarely seen in gardens. The name *Moscheutos* presumably refers to suckers that are thrown up from the root.

PUBLICATIONS RECEIVED.—From the Essex Technical Instruction Committee, *Notes on Agricultural Analyses*, made in the County Technical Laboratories, Chelmsford, during the years 1896 to 1901, by T. S. Dymond and F. Hughes. — From the Department of Agriculture, Sydney, N.S.W., *Plants Reported to be Poisonous to Stock in Australia*, by J. H. Maiden. — *Quarterly Leaflet of the Women's Agricultural and Horticultural International Union*. This is the seventh number of this publication, which is printed in English and in French. Communications relating to the leaflet should be sent to Mrs. Chamberlain, 36, Drayton Gardens, South Kensington. — *Die Alpen von Tirol, Vorarlberg und Liechtenstein*. Bearbeitet von Prof. Dr. K. W. v. Dalla Torre und Ludwig Grafen von Sarnthein, Innsbruck. — *Banks and their Customers*, a practical Guide for all who keep Banking Accounts: from the Customers' Point of View; by Henry Warren. (Fifth Edition). Publishers, Elingham Wilson, Royal Exchange, E.C.—*Nature Notes*, October. — *Annals of the Royal Botanic Gardens, Peradeniya*, edited by J. C. Willis, Director. Contents: The Royal Botanic Gardens of Ceylon and their History, by J. C. Willis; and the Royal Botanic Gardens of Ceylon as a Centre for Botanical Study and Research, by J. C. Willis. This is the first part of a publication announced by us some weeks ago.

DAHLIA VIRIDIFLORA.

This is a perfectly double flower, well formed, and of medium size, and pea-green in colour. Such is the green-flowered Dahlia lately to be seen at its best in the herbaceous ground at Kew. The scales of the receptacle are here represented by leaves (fig. 89).

HOME CORRESPONDENCE.

IVY-LEAVED PELARGONIUMS.—Much might be said concerning these plants, for in addition to those which are well known, and grown extensively for market, there are several beautiful varieties well worthy of cultivation, and of these, Leopard is one of the finest. It has semi-double flowers of an unusual mixture of crimson and mauve tints, with a crimson blotch on the upper petals, with irregular spotting. The blotch on the upper petals suggests affinity to the show Pelargoniums. The plant is of compact habit of growth, and free-flowering. Mrs. W. H. Martin is another pretty variety: flowers pale mauve, habit of growth good, and it flowers freely. Baden Powell, a recent addition to the section, has large semi-double flowers of a soft blush colour, with a tint of mauve, and a distinct blotch on the upper petals. Varieties having flowers of a deeper tint are Mrs. J. G. Day, bright scarlet; Mrs. Hawley, large flowers, cerise, makes a fine pot-plant; Kycroft Surprise, and Achievement, fine pink varieties, but more suitable for pot-culture than for planting out. Cuttings put in during September and later will make plants for flowering in the spring; but heat is required to root them. After they have started to grow, they should be kept close to the glass, and afforded plenty of fresh air, essential at all times, and more particularly during the winter. Established plants may be kept cool and dry until the days lengthen, when a little warmth may be afforded them. The shoots may be stopped if the plants are not well branched. In potting, make use of good loam, with sufficient sand to keep it open, and pot moderately firmly. It is an error in practice to let pot-plants get very dry when making growth, and too much water is equally damaging. The greatest drawback in the cultivation of Ivy-leaved Pelargoniums is their liability to attacks of green-fly and other insects, which, however, may be overcome by fumigation or dipping in an insecticide. If the plants are thoroughly cleansed

before the flowering period, there will be little trouble with them afterwards; but should green-fly appear, it must be destroyed before the leaves curl. The varieties that are inclined to run up tall may be kept lower by pinching out the points; and more flower will be produced on the dwarf, compact plants than on those allowed to grow up tall, or which are trained without stopping. *A. Hemsley.*

LARGE WALNUTS.—I enclose some Walnuts which I consider remarkably large. They were gathered from a tree about 15 feet high, and the same in spread. The nuts are very moist, well filled, and as a variety would probably supersede the small variety, *J.W. Miles*. [It is probably a French variety, known as *La Fertile*. Ed.]

ENORMOUS MUSHROOMS.—I notice in the last issue of the *Gardeners' Chronicle* that a correspondent found on the 26th of last month what he terms a true edible Mushroom, having a circumference of 2 feet 9 inches, and weighing 11 oz. It will perhaps interest your



FIG. 89.—DAHLIA VIRIDIFLORA (LIFE GREEN DAHLIA)

readers to know, and your correspondent in particular, that I have a specimen gathered to-day having a circumference of 3 feet 3 inches, and weighing 2 lbs. 1 oz. It is perfect in shape and quite sound, the gills being pink in colour, and had it not been gathered it would have grown even larger. Needless to say, it is a specimen of *Agaricus arvensis*, a true edible kind, which is, I imagine, the same *Agaric* which your correspondent refers to. *F. Williams, Warfield Hall Gardens, Bracknell.*

THE OLDEST FIRM OF NURSERYMEN.—Replying to "Enquirer," p. 273, our firm has been in existence at least 130 years, having been carried on by four generations of the same family in a direct line. Can anyone give reliable information of a longer run? *J. R. Pearson & Sons, Chilwell Nurseries, Loutham, Notts.*

CLERODENDRON FALLAX.—Good plants of this shrubby species are not often seen in gardens now-a-days, but I particularly admired some well-grown plants of it at Castle

Hill, North Devon, a few days ago. I gathered from Mr. Pearson that the seed was saved from last year's plants and sown last February. The plants, which were growing in a Pine-pit, were potted in small 32's, and measured from 18 inches to 2 feet in height, and were confined to a single stem, the large ovate leaves reaching to the rim of the pot. Plants of this height and well furnished with leaves are excellent for filling vases, or for affording colour to a group. The Pineapple was formerly well grown at Castle Hill, but the Pine-pits are now devoted to *Eucharis grandiflora*, *Calanthes*, *Ureclinas*, &c., large bunches of which plants were growing in them at the time of my visit. *Paul T. Moore.*

OLEARIA STELLULATA IN S.W. SCOTLAND.—It may interest some of the readers of the *Gardeners' Chronicle* to know that this fine shrub, so beautifully illustrated in your issue of October 5, is hardy in several gardens in the south-west of Scotland. I have grown it here for nine or ten years, and one of my plants has stood every winter we have had during that period without any protection. While it has survived, it is, however, only right to say that it was much crippled and much of its beauty destroyed by the winter of 1899-90, when we had a great deal of rain, followed by severe frost late in the season. The result was that the plant had to be severely cut back, and it has not yet recovered its former shapely appearance. It is growing on the top of a low rocky facing the east, and partly shaded by my house. When at its best, it was one of the prettiest things in my garden, and I can only hope that time will restore its former beauty. *S. Arnott, Carsethorn by Dumfries, N.B.*

TULIP UNIQUE SYN. BRUNHILDE.—Mr. R. Sydenham in his communication in the *Gardeners' Chronicle*, p. 217, justifies the prior use of the name of Unique, by stating he became acquainted with it under this name as far back as 1890. Strange to say, I cannot find any mention of Pottbakker White and Gold, in any of Messrs. Krelage & Sons' catalogues for the past three years, and it would seem as if the variety came to their knowledge for the first time in 1901. That it is a sport from the white Pottbakker there can be no doubt; a bright yellow flame appearing at the base of each petal, and reaching some distance up it. It is a matter of regret to me as an admirer of early Tulips, that any other name than Pottbakker White and Gold has ever been given to it, for this name associates it, as it should do, with the interesting group of Pottbakker varieties, and its name, Pottbakker White and Gold, is not more cumbersome than Pottbakker Pure White, or Pure Yellow, or Red Striped, all of which are to be found in Dutch and English catalogues. If it has to have a distinctive name, then nothing can be more suitable than Unique. It is unique, and when seen highly developed in pots, as I have seen it for three or four years past, from two or three growers at the Daffodil show at Edgbaston, it is impossible to speak too highly of its merits. I observe that Messrs. R. Van der Schoot & Sons, of Lillegom, in their catalogue for the present year give "Pottbakker, white with yellow base," which I have already stated I regard as its proper and most expressive name. This firm gives an interesting list of nineteen new and scarce single early Tulips, but as Pottbakker White and Gold is not included in this select list, but among the commoner sorts, I infer that it has been known by this name for a considerable time. *R. Deun.*

PINES AND THISTLES.—Pine-pollen is blown by the ton, and from afar before it fertilises the Fir seeds. Thus cross fertilisation at great cost, it is true, is ensured. In Thistles and most other Composites cross fertilisation is practically non-existent, and yet Composites are the most varied, aggressive, and numerous order of plants. How is this? Several factors have been at work to transform the sepals and bracts of campanulate flowers into a pappus. They are variations of soil, of temperature, of

altitude, and of sun-light. At last the effect, the pappus, their creation, reacts, by disseminating the seed over very different localities to multiply the effects of its parent factors ten thousandfold. Thus nature returns upon itself, reverting to the primitive agent in variation, the wind, but with more perfect means of distribution; and doing so, it prompts us to ask and give the answer to the question: Why is cross fertilisation a benefit? Evidently the answer is: Because it blends the effects of different localities. Thus we see why the Composites can dispense with cross fertilisation. It is because they blend the effects of different localities far more effectually by blowing the seed grown on one soil and level, perhaps miles away, to other soils and levels. When this fact, which may be called a truism to any student of flowers who observes them in mountainous regions, or even where there are only steep gradients, is recognised by scientific gardeners in flat countries, they will give up the empirical method of varying their plants by such secondary causes as sports selected and cross fertilisation, and work with the primary ones, viz., air, light, temperature, soil, altitude, atmospheric pressure, &c. When this change of method comes about, the forms of plants will be changed and developed, and their chemical properties intensified in a way beyond the wildest dreams of the present Picotee fancier. W. W. Strickland, B.A., Cambridge.

PAUL'S SINGLE WHITE ROSE. On p. 265 I notice "E. M.'s" remarks upon the horticultural qualities of this Rose. From my personal experience I can thoroughly endorse his remarks. On October 6, I left Paul's Single White in flower at Warley, Essex, and now in my Savoy garden I find it in great beauty, and well worthy of notice here, where there is much to please a gardener. E. W.

EUONYMUS RADICANS.—This silver variegated shrub is a much better plant for covering a wall on any aspect than most people believe. I lately saw plants of it 15 feet high and quite dense in growth. When planted in good soil it makes shoots 2-3 feet in length in one season. Even under a verandah covering a dwelling-house, I have seen the plant succeeding admirably. One is apt to associate this plant with rockeries or as edges to paths and beds. E. M.

ORCHID SPOT. I have remarked that the spotting seems to be worst in warm weather, i.e., in just such weather as the fungus first appears in the Orchid compost, which is when cultivators least expect it, and I think it must be due to some mistakes in practice. The following species, *Cattleya labiata autumnalis*, *C. Mendeli*, *C. Triandri*, and *C. gigas* suffer most severely in degree in the order of their names. Some of the *Cypripediums* likewise suffer from spot, but I am not disposed to believe that it is the same fungus that affects all species of Orchids, but if it is, it affects them quite differently. J. C.

Obituary.

THOMAS ROCHFORD.—The death of Mr. Thos. Rochford, which occurred at his residence at Turnford Hall, Cheshunt, Herts, on Saturday afternoon last, is an irreparable loss, not only to the parish wherein he dwelt (and in the promotion of whose welfare he played a leading part), but to horticulture generally. He was in the prime of a very useful life (he had just turned fifty-two) when stricken down by Bright's disease, and hundreds share in the sorrow that has now fallen upon his widow and family.

Forty-four years have elapsed since the late Mr. Michael Rochford established the fruit-growing business at Tottenham, and that was the cradle of an industry that has since made the name of "Rochford" a name to conjure with throughout the sphere of horticulture.

The subject of our sketch was the eldest of a large family of sons. He started a nursery on his own account, and this he transferred to Cheshunt in the year 1883, following his brother Joseph, who had started in the previous year. Glass-house gardening has now become the staple industry of the parish, but the brothers Rochford were undoubtedly its pioneers, and they now possess upwards of 70 acres of land, all, so to speak, under a glass roof.

By sheer hard work, pluck, and foresight, the late Mr. Rochford won a degree of success that none begrudged him. His heart was in his work, and with him it was much more than a mere industry—it was a science and an art, of which the Grapes, the Palms, the Lilies of the Valley here produced bore ample testimony. Nowhere has the principle of retardation of plants been carried to such a pitch of perfection as at Turnford Hall.

When some four or five years ago Mr. Rochford first took up the culture of Orchids,



THE LATE THOMAS ROCHFORD.
From a photograph by Thomas P. P.

many of his friends and fellow-nurserymen predicted failure, but he was nothing daunted, and now his name is associated with the Orchid somewhat as the name of "Paul" is associated with the Rose.

Viewed from the standpoint of economics, the influence the late Mr. Rochford conjointly with his brother exerted upon the parish was indeed remarkable. They may be said to have begun the transformation of a decadent agricultural into a flourishing gardening centre. The phenomenal growth of Cheshunt (especially the north end and of the adjacent parishes of Wormley and Broxbourne) during the past two decades, is very largely attributable to them. The hamlet of Turnford in the olden time was the seat of a manumery, but its ecclesiastical glory had long since departed from it, and twenty years ago it consisted only of a cluster of fourteen cottages. Now it has developed into a prosperous "townlet," frequently known as "Rochfordville," with about 100 inhabited houses.

By no means will Mr. Rochford's loss be felt more keenly than by his own employes. They

looked up to him as a master; they respected and admired him as a man, and they loved him as a friend, for such indeed he was to all of them, from the highest to the lowest, and no more touching scene has ever been witnessed in Cheshunt than that which took place last Sunday afternoon, when 300 of these men, thanks to the kindness of Mrs. Rochford, filed solemnly through the death-chamber, and gazed reverentially upon the dear dead face that had so often cheered and inspired them in life. He always studied the interests of his men, even as he expected them to study his, and he strove to make their lives as bright as possible. With this object in view, he built in 1896 the Turnford Hall Working Men's Institute, which has ever since been regarded as the social centre of the village. It is at once a club, a library, a concert-hall, and a bachelor's hotel, and was presented to the nurserymen of the entire neighbourhood, absolutely untrammelled by any conditions save the respectability of those who made use of it.

Many are the stories told now, in and out of the clubrooms, of his kindness of heart, his secret benevolence and his *bonhomie*. Up to a few weeks ago the old No. 1 van which Mr. Rochford used to drive to Covent Garden Market, was still to be seen on the premises, and it was regarded with feelings very much akin to affection. At Covent Garden he was no less popular than at Cheshunt. There his name was indeed a household word.

The funeral took place on Thursday afternoon at Cheshunt Cemetery. The deceased was a Roman Catholic, and was buried according to the rites of that Church. The nurseries of the deceased, of Mr. Joseph, and of Mr. Ed. Rochford were closed.

The business will be carried on as a private company; no shares or debentures will be issued to the public. Two sons of the deceased are now of age, Mr. Thomas and Mr. George Rochford.

JULIA LOUISA, DOWAGER LADY MIDDLETON.

The funeral of Julia Lady Middleton, who died at Settrington Hall, Malton, on Friday last, took place on Monday, October 14, the body being interred in the family vault, underneath the chancel of Birdsall Church. On Monday morning the church was decorated by Mr. B. Waddis, the head gardener at Birdsall. Birdsall is a famous garden, and has been for long years under the charge of Mr. Bailey Waddis, a correspondent of this journal. The deceased lady was an enthusiastic lover of a garden, loving flowers for their own sake; and being herself greatly beloved by rich and poor. She was the wife of Henry, eighth Lord Middleton, and was born on April 5, 1825.

SOCIETIES.

ROYAL HORTICULTURAL.

On Monday a meeting of the Committees of this Society took place on Tuesday last, in the Drill Hall, Buckingham Gate, Westminster. There was a very varied and interesting display of plants and flowers, and the Hall was well filled with the various exhibits. Of plants, we may mention the beautiful collection of *Nepenthes* from Messrs. JAS. VEITCH & SONS, which were awarded the Society's Gold Medal, and the species *ventricosa*, exhibited for the first time, was awarded a First-class Certificate. Prominent amongst the cut flowers were large collections of *Poppy*, *Asters*, *Chrysanthemums*, *Dahlias*, beautiful *Tea Roses*, and miscellaneous hardy flowers.

The Floral Committee recommended awards of merit to *Chrysanthemums*, *Asters*, and to a seedling *Nepenthes* raised by Mr. Elwes.

Orchids were numerous, and several awards were made to novelties described below.

There was not much fruit shown, as the Crystal Palace exhibition was held so short a time previously. But there was a large collection of Potatoes, a collection of choice hot-house fruits, and miscellaneous dishes of fruit, among which was the finest dozen specimens of Ribston Pippin Apple we have ever seen. These Apples were shown with other varieties from Messrs. J. PEEB & SONS, West Norwood. Messrs. H. CANSELL & SONS, Swanley, exhibited a capital and representative collection of Gourds. Awards of Merit were recommended to a new Plum shown by Mr. JAMES BROWN, Reigate, and to a new cooking Apple shown by Lord SUFFIELD (gr. Mr. Allan).

Floral Committee.

President: W. Marshall, Esq., chairman; and Messrs. Chas. T. Drury, H. B. May, Jas. Walker, R. Dean, G. Reuther, Jas. Hudson, Jas. Jennings, C. J. Salter, J. F. McLeod, C. R. Fielder, Chas. Dixon, W. Howe, Herbert J. Cutbush, Chas. E. Pearson, Chas. E. Shea, H. J. Jones, W. P. Thomson, Geo. Nicholson, E. H. Jenkins, Harry Turner, F. Page-Roberts (Rev.), Ed. Mawley, and J. Fraser.

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, showed a group of perennial Asters in pots. This exhibit extended almost the length of the hall, and the plants were in full bloom. Mr. Jones' collection is the subject of a note on p. 289, we need not therefore refer to this exhibit in detail, but the following varieties, very pretty in the group, are not mentioned in the note referred to:—A long-tubed formous, a dwarf, shrubby plant, very suitable for pot culture, colour of flowers rich pink, exceedingly free, N. B. Carlotta, with pale pink flowers; N. B. June, and N. B. Florinda. Mr. H. J. JONES had also a group of Chrysanthemums in pots, in which were noticed fine blooms of Earl of Arroz, a yellow Japanese variety, with good, drooping florets, slightly incurving at tips; Madame Von Andre, Miss Evelyn Douglas, rosy purple-coloured Japanese; Ryecroft Crimson, the new border variety, described on p. 298, col. 2, and other choice varieties in both sections (Silver-gilt Flora Medal).

Messrs. W. CURTIS & SON, Highgate Nurseries, London, N., and Barnet, Herts., made an exhibit of greenhouse flowering plants, all of them in beautiful condition. There were Bouvardias, Pride of Brooklyn (white), Humboldt grandiflora, also white, with very long tube and large segments; President Cleveland, and Renee des Roses; a few plants of *Skimmia japonica* were finely carried, as was *Pernettya intermedia* and *Calliandra purpurea*, with its long growths bearing numerous axillary clusters of purple coloured berries, rather smaller than Sweet Pea seeds; *Eriosea mammosa*, *Callia*, *verticillata*, and others, were abundantly flowered; and there were several varieties of tree Carnations in pots, as Mrs. S. J. Brooks, white; Miss M. Hubbard, yellow-gold, splashed with red; Ethel Smith, rose coloured, &c. (Silver Bankian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited a group of flowers of *Cistus* and single flowered *Halimias* in very fine condition for so late a date. The same firm had sprays of ornamental trees and shrubs, showing the beautiful fruits they acquire in autumn. Some of the most prominent were *Quercus coccinea*, *Ilex*, *Thunbergii*, *Liriodendron Tulipifera* (the Tulip-tree), whose leaves become quite rich golden-yellow colour; several varieties of *Aver*, *Ribes typhaleum*, &c. (Silver Flora Medal).

Mr. T. S. WAKE, LTD., Hale Farm Nurseries, Editham, exhibited a group of cut flowers of perennial Asters, border Chrysanthemums, *Pyrethrum roseum*, *Halimias*, &c. *Amaryllis Belladonna* was shown in pots, also a pretty pale coloured variety of this plant named Blanda (Bronze Flora Medal).

Messrs. BAIRD & SONS, King Street, Covent Garden, exhibited a group of hardy flowers, including Asters, Gladioli, *Halimias*, Chrysanthemums, &c.; also plants of *Lonicera sempervirens*, &c. (Bronze Flora Medal).

Mr. J. RUSSELL, Richmond Nurseries, Surrey, exhibited a very attractive group of varieties of *Enonymus japonicus* in pots, also *E. rotundifolius*, &c. The plants were finely coloured, and made a picture of considerable variety. From the same establishment came a group of *Skimmias* in pots, such as *S. oblata*, *S. fragrans*, and *S. Fortunei*. Some of the plants were of large size, and most of them were well branched (Silver Flora Medal). Mr. J. RUSSELL also showed some specimens of *Cypripedium erectum*, a variety of erect habit and yellow foliage.

Mr. GEO. PLINCOE, Longwood Nurseries, Borks, exhibited a group of lovely Tea Roses in great variety. The blossoms appeared to be very fragrant and lovely as in June (Silver-gilt Flora Medal).

Messrs. W. WELLS & CO., Ltd., Earlwood Nurseries, Redhill, Surrey, exhibited a fine group of Chrysanthemums, in pots, border varieties, and later-blooming decorative sorts, were grandly represented. Of the border varieties, Orange Masse was very beautiful; White Quintus, and Mychell Beauty, rich golden yellow. There were also some new Japanese sorts of promising character, including several raised in Australia, one of which is described under "Awards" (Silver Flora Medal).

The Earl of RAMSEY, Longford Castle, Salisbury (gr. Mr. Hazleton), exhibited a group of extraordinary Celosias. The plants were 5 ft. high, and had shoots with plumes from bottom to top. The strain is a very good one, and they had been excellent cultivation (Bronze Bankian Medal).

Mr. W. J. GODFREY, Exmouth Nurseries, Devonshire, had grand Chrysanthemum blooms, all of those mentioned below being English seedlings, raised from seeds saved at Exmouth. There were some plants of decorative varieties, also, including the following:—Harry Gover, reddish-buff, or chestnut colour; De-lightful and Yellow Bay, both yellow; Bridesmaid, light purple; and Market Favourite, deep reddish-purple. These plants were about 2½ feet high. The Japanese exhibition sorts included Bessie Godfrey, yellow, Exmouth Crimson, Japanese incurved; Sensation, described on p. 298, col. 2; Exmouth Rival, a beautiful crimson Japanese of good size and much refinement; Godfrey's Triumph, reddish-crimson, Queen Alexandra (see col. 2, p. 298), Edward VII. (see p. 298, col. 2); and Godfrey's Masterpiece, &c.

A group of Tree-Carnations was shown by Lord DE RAMSEY, Haverland Hall, Norwich (gr. Mr. G. W. Misk). Lady DE RAMSEY had flowers of red colour, very fragrant, and the Hon. Miss Alexandra Fellowes was pink, possessing good calyx, very fragrant (Bronze Bankian Medal).

Cordylone Dracoena Mayi is a very pretty decorative plant, shown by Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, London. There were about two dozen plants, with leaves 2½ inches broad. The variety colours well in small pots, and is a capital plant for table-decoration. It should not be cultivated in larger than 5-inch pots, and it will succeed very well in 5-inch pots. There were also some nice plants of *C. latifolia*.

Messrs. AS VERRILL & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of perennial Asters which had been lifted from the open ground and placed in pots. The plants and flowers were finely developed, especially one of turban-like form, and many others. The group was brightened by flowers of *Tritoma hybrid* in several varieties, and Chrysanthemum maximum. Messrs. VERRILL also showed blooms of varieties of *Streptocarpus*, including varieties with blue, white, purple, red, mauve, and heliotrope flowers. These are very beautiful, and it is a satisfactory feature at them that they will come true from seeds.

The firm staged an imposing group of those interesting Philippine and Malayan plants—Nepenthes, finely pitched in most cases, and in fine cultural condition. Much interest centred in *N. ventricosa*, a new species from the Philippines, introduced from Hong Kong, a plant of which is also in the possession of the Royal Botanic Gardens, Kew. The plant shown, which had been depleted of many growths for trade purposes, possessed eleven pitchers. A full grown pitcher measured 5 inches in height, and the larger diameter 1½ inches. When half grown, it is of a reddish-copper tint, but later the green tint predominates. The mouth of the pitcher is folded back at the edge, which is sinuously lobed, and is of a crimson tint. The operculum is yellowish, and rather smaller than the opening. The pitchers are constructed in the middle, house-glass fashion. A First-class Certificate was granted the species. Very fine pitchers were those of *N. Cheloni* excellent green, with dark brown spots, some of them capable of holding a pint of liquid. It will be sent out this year. *N. Balmourana*, a cross from Masteriana and MIXTA, a pitcher marked with crimson splashes on a ground of green suffused with red. The operculum is hooded, and of a deeper tint than the rest. It was raised at the Royal Exotic Nursery, and will be sent out this year. *N. Baccarata*, with bright red pitcher, and two spine-like horns; *N. Curtisii* superior, very fine pitchers, some being quite a foot in length; *N. Tiveyana*, figured in the *Gardener's Chronicle*, vol. XVI, 1897, p. 290. *N. mixta* saemmuia, a seasonal variety, raised at the same time as the type. A Gold Medal was awarded for the above groups.

Awards.

Chrysantheum Godfrey's Masterpiece.—A crimson Japanese variety. From Mr. W. J. GODFREY, Exmouth (Award of Merit).

C. Godfrey's Triumph.—A large Japanese variety, with reddish-crimson flowers. From Mr. W. J. GODFREY (Award of Merit).

C. Mrs. T. H. Peckett.—This is an Australian novelty that gained a Gold Medal in April, 1901, for the best new variety shown. It is a Japanese flower of very large size, yellow in colour; florets narrow, but very numerous, and of good length, making a flower of great depth. Shown by Messrs. W. WELLS & CO. (Award of Merit).

Nepenthes ventricosa, described above (First-class Certificate).

Perennial Aster cordifolius pictus.—Described as a seedling from cordifolius "Piana," height 4 feet. The flowers are small, and pale mauve in colour. From Mr. E. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree, Herts.

Perennial Aster "Lambert's".—Described as a seedling from Hon. Edith Gibbs, and grows about 3 feet high. Colour the same as the preceding variety, but the ray-florets are more imbricate, and reflex considerably. The inflorescence is different in habit, and the plant is a stronger grower (Award of Merit). Several other good seedlings were shown by Mr. BECKETT.

Verve Mrs. Elliott.—The flowers of this seedling are of silvery-red and very pretty. From H. J. JONES, Esq., Colston Park, Cheltenham (gr. Mr. Walters). The varieties Miss Carrington, Lady Dyer (very singular colour, purple and red), and Elliott, were also shown, and are very pretty.

Orchid Committee.

President: Henry Little, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), H. J. Chapman, H. A. Tracey, F. A. Reider, J. W. Potter, W. H. White, W. A. Bilye, T. W. Bond, E. Hill, H. M. Pollett, and W. H. Young.

There was a very effective and interesting show of Orchids, including some remarkable specimens, and fine new hybrids.

Sir THEOPHILUS LAWRENCE, Bart. (gr. Mr. W. H. White), showed the most remarkable specimen of *Cattleya Bowringiana* ever exhibited, an immense plant, in splendid condition, furnished with many spikes bearing numerous finely-coloured flowers; also a basket containing some well-grown plants of *Banania carnea*, and *B. mollaris*, for which, as well as for the *Cattleya Bowringiana*, Cultural Commendations were awarded.

Also in the group were the pretty carmine-tinted *Sophia-Cattleya* × *Chambouriana* × *S. grandiflora* × *C. Harrisoniana*, *Cypripedium* × *Bellevia* (*Chamberlainiana* × *philippense*), and a fine specimen of *Cypripedium* × *montanum* (*speciosum* × *superbium*). A Silver Bankian Medal was awarded for the group.

Sir FREDERICK WOOD, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed a neat group of well-grown plants, for which a Silver Flora Medal was voted. In it were *Cattleya* × *Maron* (*aurea* × *velutina*), with eleven flowers; *C. Bowringiana* Lady Wigan, a charming, delicately tinted form; *C. labiata* *fluminata*, a fine dark variety with many flowers; *Vanda Sandersoniana*, which had been in the collection fourteen years; *Cattleya Eldorado* *alba*, *C. aurea*, the new *Lobelia-Cattleya* × *Wilsoniana*, the fine light-coloured *L. C. × cultiloglossa* Princess of Wales, *Miltonia Roezlii* *magnifica*, with four flowers on a spike; a batch of the elegant *Stenoglossa longifolia*, *standopaea Martiana*, *Coleogyne ocellata*, *Cypripedium* × *Allaniana*, *Laelia pulchra*, &c.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bond), staged an effective group, rich in well-flowered *Dendrobium Phalaenopsis Schroderiana*, the central plant a white form, with slight purple veining on the lip, having seven spikes. Arranged with them were two plants of the white *Laelia pulchra* "Gatton Park" variety, which has a bluish marking on the lip; *Dendrobium bigibulum*, *D. chrysanthum*, *D. heterocarpum*, *Maxillaria (Camaridium) ochroleucum*, *Phalaenopsis grandiflora*, *Cattleya aurea*, *Miltonia Reginaldi* *critica* "Gatton Park" variety, still fine after being two months in flower. *Eppinhonis* × *Vendula*, *Coleogyne speciosa*, and other showy species (Silver Bankian Medal).

J. BRADSHAW, Esq., The Grange, Southgate, showed a group of exceedingly well-grown and flowered *Cattleya* × *Mantini*, *C. Mantini* *robusta*, the fine *C. × J. Bagnley* *Bowringiana* × *Harrisoniana*, which seems to be an improvement on *C. × Mantini*; and *C. × Parthena* "Prince of Wales," white, with rose marking on the lip (Silver Flora Medal).

Messrs. CHARLESWORTH & CO., Heaton, Bradford, also showed a Silver Flora Medal for a group of

thirty-six finely flowered *Oncidium Forbesii*, and some fine hybrids, the best of which are enumerated in the list of Awards.

Captain HOLLARD, Westonbirt, Tetbury (gr. Mr. A. Chapman), showed two grand specimens of *Vanda Kimballiana*, the larger of which bore eleven spikes, having together one hundred and thirty-five white flowers with rose-crimson labellum. The other specimens bore fewer but larger spikes, one of which had twenty-four expanded flowers. Cultural recommendation; also a good dark variety of *Laelio-Cattleya* × *Ingrami* L. *Daviana* × *C. aurea*.

W. M. APPELTON, Esq., Tyn-y-Coed, Weston-super-Mare, showed *Cypripedium* × *Eos niveum* - Charlesworthii-resembling *C. godefrigi* in many respects.

ISAAC CARR, Esq., Tiverton-on-Avon, sent a spike of *Cypripedium* × *Carrollii* - *Elliottianum*, Messrs. Ingram, Low & Co., Bush Hill Park, showed *Dendrobium Amesiae* from New Guinea, with habit of *D. taunum*, and whitish, rose-tinted flower; in general appearance like a form of that species.

but with oval front lobe to the lip. Two forms were shown, the one much larger than the other.

W. THOMPSON, Esq., Walton Grange, Stone, Stafford (gr. Mr. W. Stevens), showed oblong-ovate - *crispiflora* - *Harrimanii* "Lily," with pretty white flowers blotched with brown-purple and with a bright rose tint over the sepals and petals, which constituted its chief distinctive feature.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), sent *Laelio-Cattleya* - *Firefly* - *Bowringiana* - *Domumana*, with singular-looking flowers, somewhat resembling those of *C. bicolor*, and of pale blue-purple colour.

Mr. H. A. TRAVIS, Twickenham, showed a spike of a supposed natural hybrid between *Cattleya bicolor* and *C. Leopoldi*.

Awards.

FIRST CLASS CERTIFICATES.

Cattleya × *Laelio-Cattleya* - *Gold Medal* × *aurea*, from Messrs. CHARLES WORTH & Co., Heston, Bradford. A great improvement on the variety, for which they

much larger and broader in all its parts. Sepals and petals whitish, tinged with rose, centre of the lip of a rich orange, front chloro-crimson. A delicate veining of pale yellow or light rose extends over the side-lobes of the lip, otherwise there was no evidence of *C. aurea* - usually seen in hybrids of it.

BOTANICAL CERTIFICATE.

Phoradendron sp. n. from R. T. MEASURES, Esq., Camberwell (gr. Mr. H. J. Chapman). A small growing species, with slender spikes of reddish-orange-coloured flowers.

Before the regular business of the meeting began the honorary secretary announced the great loss which the Orchid Committee, and horticulture generally, had sustained by the death of Mr. Thomas Rochford, a member of the Orchid Committee, and a Vote of condolence with his widow and family was passed.

Fruit and Vegetable Committee.

Presided by Geo. Buxford, Esq., Chairman; and Messrs. Jos. Cheal, W. Farr, G. T. Miles, S. Mortimer, Alex.

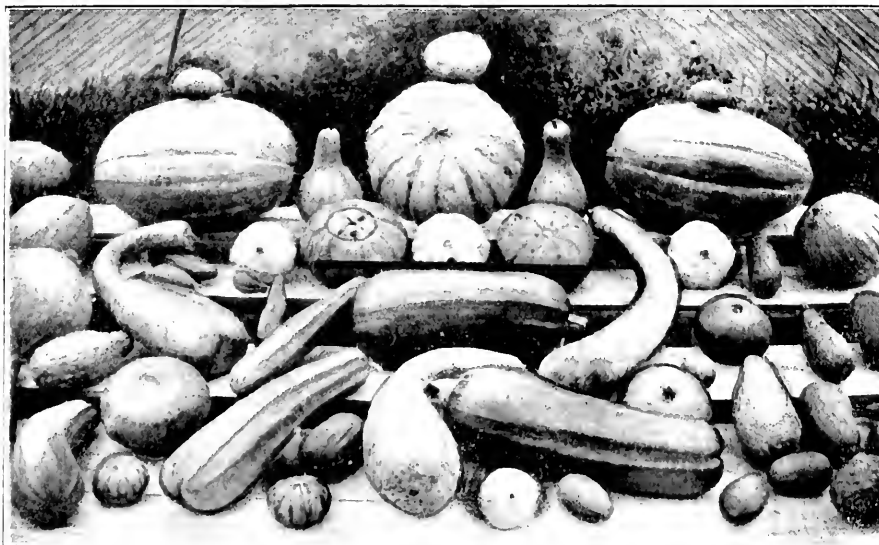


FIG. 31. - SOME GOURDS GROWN BY MESSRS. H. CANNILL AND SONS.

ROBERT TENNENT, Esq., Monkholme, Buryley (gr. Mr. Balnforth), showed a very nicely flowered specimen of the clear yellow *Oncotoglossum grande aureum*, "Monkholme variety."

T. W. THORNTON, Esq., Brockhall, Weedon, showed *Cattleya* × *weedenioides* *granulosa* *Schottlandiana* × *Mendeli*.

M. CHAS. MARON, Brunoy, France, showed *Cattleya* - Mrs. Herbert Greaves - *Harrimaniana* - *Gaskelliana* alba, with pale pink flowers and white labellum; also *C. × Lady Ingram*, Maron's variety. (See Awards.)

R. J. MEASURES, Esq., Camberwell (gr. Mr. H. J. Chapman), showed *Cattleya labiata* *haemata*, a delicately tinted variety, of an uniform pale rose-pink colour.

MESSRS. JAS. VEECH & SONS, Chelsea, showed the stately and beautiful *Laelio-Cattleya* - *Domumana* *Langleyensis* - *L. purpurata* *Bryonia* × *C. Downiana*, with large flowers having an intensely dark claret-purple lip, with delicate tracery of yellow at the base, and the remarkable hybrid *Epi-Laelia* - *Eos* - *L. ephrae* *L. Daviana* &c. The sepals and petals were in the way of *E. ephrae*, but rather broader, white, tipped with purple. Lip ovate, and slightly concave, ciliate, and undulate at the margin, white at the base, with traces of the purple lines, as in *L. Daviana*, the front purple. Also *Cattleya* - *Clytie* - *Bowringiana* - *veitiana*, with flowers equal to a good *C. Bowringiana*.

received an Award of Merit, September 24. Sepals and petals of an attractive fawn-yellow tint, with clear yellow margin. Lip large, rich crimson, changing to deep claret crimson towards the centre.

Laelio-Cattleya × *Heterophyllum* *Cattleya* *h. entirely* (L. tenchosa - *C. Hartmanni*). A grand flower, most richly coloured. Showy by the petals - Messrs. CHARLES WORTH & Co. Sepals and petals greenish yellow, the sepals veined with purple, and the petals marbled with port wine colour, the pale yellow veining showing between, up of a rich claret or rose tint, with some slight yellow lines at the base.

AWARDS OF MERIT.

Laelio-Cattleya - *Belmore* - *L. Daviana* × *C. labiata*, from Sir FREDERICK WHEAT, Bart., Clare Lawn, East Steven (gr. Mr. W. H. Young). A finely-shaped flower, very large for the habit of the plant; sepals and petals of light rose-colour, lip dark purple, with a light rose tinge in the front, and some small purple lines at the base.

Cattleya - *Lolita* - *Aclandii* - *Thames* *Backhouseana*, from Messrs. CHARLES WORTH & Co., Bradford. Flower of good substance, the lip ruby-purple, and the sepals and petals bright rose, the petals having purple tips, derived from *C. Thames* - *Backhouseana*.

Cattleya - *Lady Lancaster* - *Moran's variety* - *Eldorado* - *Downiana* *aurea*, from M. CHAS. MARON, Brunoy, France. A fine flower, resembling *C. Eldorado* splendens, but

Dean, W. Pope, E. Belett, G. Reynolds, J. Jaque, F. Q. Lane, G. Norman, A. H. Penison, and C. Herrin.

Messrs. H. CANNILL & SONS, Swanley, Kent, exhibited an excellent collection of Gourds (see fig. 31), which in variety was the best we have seen for many years. From the tiny Goochberry Gourd (*Cucumis* *grosularia*) to the Mammoth Pumpkins and Squashes, there were fruits which are ranked in shape a great variety of fruits and other articles. The Orange Gourd, for instance, is a very faithful representation of an orange - silver gilt Knicker (Vote of Thanks).

Mr. J. B. CH. PACE, exporting agent, 1 and 2, White Rock, Greenwich, exhibited a quantity of German-grown fruit, including Grapes, Gros Colman, Gros Maroc and Alphonse, also Tomatoes, &c., in gross-hatted baskets, packed in the "strong" as placed on the steamer (Vote of Thanks).

Messrs. HARRISON & SONS, Lancaster, made an exhibit of thirty fine dishes of Onions, in which most of the popular varieties were represented. Fifty good bulbs (silver gilt Knicker) (Vote of Thanks).

Messrs. BARK & SONS, King Street, Covent Garden, London, exhibited a collection of Cabbages, including Christmas Bunchard, Large York, Sugar Loaf, Red Dutch, and Beal for All, also several varieties of Savoys.

Messrs. J. PIERCE & SONS, Rompall Link Nursery, West Notwood, London, exhibited a dish of extraordinary fruit of Ribston Pippin Apple. There were twelve

fruits, which weighed collectively 7½ lbs. They were from trees worked upon the Paradise stock, and about three years old. Gascongne's Scarlet seedling, Cox's Orange Pippin, and King of the Pippins, Apples from the same establishment, were nearly equally notable (Silver Bankian Medal).

Small white Grapes, perfectly ripe and sweet, were shown by Dr. BONAVIA, from Worthing. The variety was apparently Sweetwater, and it ripens every year on walls in that district.

Three Seedling Apples were shown from different districts that failed to obtain an award.

A dish of Apple Watlingford Pippin was shown by W. H. HEAWOOD, Esq., Watlingford, Bowden, Cheshire. The fruits are very large, apparently a green kitchen variety.

A dish of the "Gold-luster Black" Bullace, with large round fruits, was shown by Mr. A. J. HARWOOD, Colchester.

Mr. E. W. GREEN, Wisbech, showed a collection of upwards of hundred of Potatoes, many varieties being represented by excellent tubers (Silver Bankian Medal).

Twelve dishes of Pears were shown by Lord SUFFIELD, Ganton Park, Norwich (gr., Mr. W. ALLEN). The fruits were of large size, very fine, and the varieties included Doyenne du Commerce, Marie Louise, and others equally choice (Silver Bankian Medal).

H. V. HOLDEN, Esq., Eastwell Park, Ashford (Mr. H. WALLERS, gr.), exhibited a collection of fruit, including thirty Melons, three bunches each of Grapes, Black Alcane, Muscat of Alexandria, and Gros Maré; also a number of dishes of fine Apples (Silver Knightian Medal).

Awards.

Apple Norwalk Beauty.—The fruits are of large size, smooth skin, and of yellow colour. The eyes set in a considerable depression, segments large, closed; stem short, set in a rather deep basin, which is covered with russet, which appears also upon other parts of the fruit occasionally. It is a seedling from Warner's King x Watling Abbey Seedling, but partakes more after the characteristics of the latter variety. The fruits ripen early, and are perfectly fit for use now. From Lord Suffield, Ganton Park, Norwich (gr. Mr. Wm. ALLEN) (Award of Merit).

Apple Beauve's Crown Drop.—This variety may be briefly described, we are informed, as a red-fleshed Cox's Golden Drop, but the fruits disappeared so quickly, our reporter was unable to describe them from inspection. Shown by J. BROWN, Esq. The Planes' Regard (Award of Merit).

The Lecture.

In the afternoon Mr. Geo. Binyard read extracts from three papers upon "Hardy Fruit for Scotland." The first was one by Mr. Donald McLeone, who spoke of the cultivation of hardy fruits in the north of Scotland; the second by Mr. W. Wright, Tynmouth Castle Gardens, who dealt more with the conditions of central Scotland; and Mr. J. Day, Galloway House Gardens, who discussed upon the culture of fruits in the South of Scotland.

Each of the essays recommended a list of the varieties best suited for the districts, and these will be printed in the *Journal* of 29. *Royal Horticultural Society*.

NATIONAL CHRYSANTHEMUM.

OCTOBER 2, 9, 10. The National Chrysanthemum Society held its first exhibition of the present season in the Royal Aquarium, Westminster, on the above dates. There was a satisfactory display of Chrysanthemum flowers, but little-blooming varieties, specially cultivated, appeared to be more prominent than generally early blooming or border varieties.

The displays from members of the trade were many and interesting, and the exhibits of fine vegetables shown for prizes offered by Mr. H. DUNNELL, attracted much attention.

A meeting of the Floral Committee was held, and four First-class Certificates and one Award of Merit were recommended to as many novelties. These are described below. The general secretary, Mr. R. DEAN, was sufficiently recovered from his recent indisposition to attend the exhibition.

COMPETITIVE CLASSES.

The best group of Chrysanthemum plants was judged to be one from Mr. E. DYE, or to E. J. WALTERS, Esq., Beckley Hall, Kent. Both it and one shown by Mr. W. HOWE, or to Lady A. TAYLOR, Park Hill, Streatham Common, were of the usual type, and there was little to criticise them.

Class 2, for twenty-four Japanese blooms, in not fewer than eighteen varieties, was won by Mr. NORMAN DAVIS, Framfield, Sussex. The collection was com-

posed of fine blooms in point of size, but several of them were not quite at their best colour. Some very good ones were Florence Molynex, Soleil d'Octobre, Phobos, Mrs. Darby, Scottish Chief, Mrs. G. Milcham, Chas. Longley, Lily Mountford, Esq., 2nd, Mr. (Chas.) Howard, gr. to Sir F. FITZGERALD, Leigh Park, Havant.

There was more competition in the class for twelve Japanese blooms distinct, the best of five competitors being Mr. W. MERRITT, Stansted Park Gardens, Emsworth. His blooms were Lady Phillips, R. Updon, Australia, Soleil d'Octobre (very good), Phobos (good), Henry Stowe, Kyoanote (in fine condition), Mrs. G. Milcham, Mrs. W. CURSHAM, Mrs. J. IRYARD, Mrs. GIBBONS, and Miss A. BYRON (very nice); 2nd, Mr. W. KING, gr. to G. WALKER, Esq., Chapel House, Millham Cross; and 3rd, Mr. A. MACKAY, gr. to F. H. BOWDEN-SMITH, Esq., Danesbury, Beving, Hereford. Soleil d'Octobre was very fine in this exhibit, and Miss Alice Byron.

Mr. J. BROOKES, gr. to W. J. NEWMAN, Esq., Tottenham Park, Tottenham, Herts., won the class for six blooms.

The best twelve bunches of early-flowering varieties were shown by Mr. J. H. PAXER, 11, Ferial Street, Longborough. His varieties were Golden Deseraines, Harvest Home, Ivy Star, Victor, New, Bronze Prince Crimson, Marie Masse, Madame Marie Masse, Durs-Peto (white), Golden Queen of Earles, Francis-Vulnetier, Mons. G. Menier, and Miss Ruth Williams. This was a good representative collection of Chrysanthemums, most suitable for flowering in September and early October, and Mr. E. J. SCOTT, Maidenhead.

The best collection of six bunches came from Mr. D. B. CRANE, 1, Woodview Terrace, Arkway Road, Brighton, London, N.; Lemon Queen, Madame Ed. Lefort, bronze-coloured Tompon, and Mr. J. R. MOLLISON, a large yellow and bronze coloured flower, were included in this exhibit. 2nd, Mr. J. BROOKES, gr. to W. J. NEWMAN, Esq., Tottenham Park, Tottenham, Herts.

The Floral Committee's Awards.

Chrysantheum Floratum, VII.—A fine elegant crimson-coloured Japanese flower, with pale bronze coloured reverse. From Mr. W. J. GORDON, Exmouth (Award of Merit).

Chrysantheum Japonicum.—This is from a cross between Madame Masse and bronze Primrose. The plants were 3 feet high, bushy, of good habit. Flowers are crimson, and the colour lasts unusually well. An excellent border and market plant. From Mr. H. J. JONES (First-class Certificate).

Chrysantheum Martini.—An excellent yellow spart from Madame Marie Masse. Two plants were shown from the open ground, and were covered with fine flowers. From Mr. J. MARIN, florist, Legation Buzard and Messrs. COCKER & SONS, Aberdeen (First-class Certificate).

Chrysantheum Alendani.—Very excellent distinct looking Japanese flower, with broad fls., colour lawn, or reddish-brown, shown by Mr. W. J. GORDON (First-class Certificate).

Chrysantheum Scapularis.—A large-flowered Japanese, with wide fls., inverting at tips, colour rich yellow with reddish streaks on fls., from Mr. W. J. GORDON (First-class Certificate).

EXHIBITION OF BRITISH-GROWN FRUITS AT THE CRYSTAL PALACE.

NURSERYMEN'S COMPETITION.

OCTOBER 10, 11, 12.—In a Supplement to last week's issue of the *Gardeners' Chronicle*, we published a full report of all the competitive classes at the Royal Horticultural Society's fruit show, open to market growers, gardeners, and amateurs. That report showed that through the medium of the district county classes, in which counties and groups of counties are arranged to compete with each other on more or less even ground, in respect to climate, soil, &c., there was a representative display of fruit from all parts of the Kingdom. Still Kent held its own, and more than its own. Mr. Geo. WOODWARD, gr. to ROBERT LEIGH, Esq., near Maidstone, exhibited in about sixty-five classes, and in these he won as many as thirty-six 1st prizes and eleven 2nd prizes. Mr. STOWERS, gr. to S. H. DEAN, Sittingbourne, was also a very successful exhibitor from the same county. It is evident that in the Kent produce was not so freely admitted to the exhibition, through a desire to give other districts a better opportunity of winning prizes, the standard of quality would thereby be materially reduced. At the same time, it might be possible to extend the district county classes, with a view to the further encouragement of districts less favoured than others.

Several categories of the judges' awards were made after our notes were taken. Mr. W. H. DEER, Mychett Nursery, Frinton, informs us that he subsequently obtained 2nd prize in the Market Growers' Class for a box or basket of Tomatoes, showing Dyer's Seedling.

The arrangements for the show were extremely good, and as the central nave was utilised for a large proportion of the exhibits, there was not only so much running about necessary as usual, when a large proportion of the nave is devoted to the show, the exhibi-

tion entails much work upon the Society, especially upon the Rev. W. WILKES, Mr. READER, Mr. S. T. WELSH, and Mr. HEMPHREYS.

Below are some remarks upon the nurserymen's exhibits, competitive and non-competitive. In respect to the collection of fruit shown, almost all of them were competitive. Nurserymen who exhibited fruit grown entirely out-of-doors were asked to exhibit in one of three classes, differing from each other only in the amount of table-room granted. Class 1 was reserved for orchard-house fruit and trees. It is a noteworthy circumstance of the season that Messrs. GEO. BRAYNARD & CO. won a Gold Medal in this competition, as well as the Gold Medal in the large class for out-of-doors grown fruit, which was also offered for competition. Nurserymen who failed to enter in one of the classes named above were deferred from any award of any sort.

FOR FRUIT GROWN ENTIRELY OUT-OF-DOORS.

CLASS I.

Twenty-eight feet square table.

The prizes offered in this class were a Gold Medal, a Bronze Medal, and a Silver-gilt Knightian Medal. The 1st prize was splendidly won by a superior lot of fruits from Messrs. GEO. BRAYNARD & CO., Royal Nurseries, Maidstone. The table was abundantly furnished with choice varieties of Apples and Pears, Nuts, Bannons, Sweetwater Grapes, Shepherd's Bullace, Quince, and Medlars. There were 30 distinct varieties, including 20 dishes of Apples, eighty of Pears, and thirty miscellaneous. The fruits were of large size and the high quality, colour being especially well developed. A few stands were used to break the monotony of the arrangement.

Apples.—Of Apples, we noticed the following:—Mrs. Phillimore, a new red-coloured Apple, introduced by Messrs. Geo. Binyard & Co.; Maral, Crimson Quinon, Mabbot's Pearmain, Golden Renette, Winter Peach, a good, heavy, cooking Apple, carrying a bloom suggestive of a Peach; Col. Vaughan, James Grievé, Stone's Striped Seedling, Emperor Alexander, Golden Noble, Swedish Renette, a magnificent dish of fruits, showing the best form and colour; Ribston Pippin, Bannons-Winter Renette, a richly-coloured Apple of considerable use in making an effective display, as are Beigelmeier, Gascongne's Scarlet Seedling, &c. The dish of fruits of the last-named variety was exceptionally fine. Then there were Royal Jubilee (Binyard), Anne Elizabeth, Byron Wonder, Bismarck, Lord Bury, New Wonder, Hawthorned Cox's Pomona, St. Edmund's Pippin, Lane's Prince Albert, a variety that may be recommended for its quality and free cropping characteristics; Duchess of Oldenburg, Grayson, Castle Major, Wilmington Fillsbasket, Nother, Belle Pointoise, Allington Pippin, one of Messrs. Binyard's new and best dessert Apples; Malcolme Drum, Thomas Rivers, Stirling Castle, Cox's Golden Wonder, Hawthorned Cox's Pomona, Golding, Pea-good, Nonsuch, Colton Pippin, and Wealthy.

Pears.—The following Pears were most noticeable:—Margate, Maral, Colton Calveshoe Conference, Inverdon, Triumphant de Yverme, Beurre Bell, Feildity, Louise Bonne of Jersey, Duchesse d'Angoulême, Princess, King Edward, Pittaston Duchess, Madame Andre Leroy, Magrate, Brockworth Park, Emily d'Hay, and Duxton Hardy.

Messrs. H. CANNELL & SONS, Swanley, Kent, were the only other exhibitors in this class, and were awarded 2nd prize. The table was scarcely furnished sufficiently, but the collection included some good fruits, amongst which were the following Apples: Cox's Pomona, Bismarck, Worcester Pearmain, Cellini, and Stirling Castle.

CLASS II.

Twenty-four feet square table.

Mr. JOHN BASHAM, Bass-ale, Monmouthshire, staged a fine exhibit in this class, and won the 1st prize, viz., a Gold Medal. The following Apples were especially excellent: Adams' Pearmain, Crimson Quinon, Ribston Pippin, Emperor Alexander, The Queen, Tippet's Pearmain, Eckhville Seedling, Golden Noble, Byron Wonder, Gascongne's Scarlet Seedling, Mrs. BARRY, St. Basil, a good-sized Apple, yellowish-green, with streaks of red colour; Bannons's Red Renette, Wealthy, Hawthorned Cox's Pomona, St. Edmund's Pippin, Lane's Prince Albert, a variety fine in colour; Allington Pippin, a very fine sample; Warner's King, New Hawthorned, Royal Jubilee, King of Pippins, Sandringham, Lord Derby, Cox's Orange Pippin, Mabbot's Pearmain, Lane's Prince Albert, &c. Of Pears there were Marie Louise, Princess, Louise Bonne of Jersey, Poyenne Boussoch, Feildity, Appartament, and Hawthorned Cox's Pomona; Beurre Hardy, Beurre Louise d'Orléans, &c. A centre stand in the form of a square pyramid with shelves was very effectively draped, and furnished with the most showy fruits, including ripe hardy Grapes. Monmouthshire is evidently one of the most suitable counties for choice fruit production.

The 2nd prize of a silver gilt Knightian Medal was won by Messrs. JAS. CHEAL & SONS, Loughfield Nurseries, Crawley, Sussex. Of Apples the following varieties were very good: Colonel Vaughan, Cox's Orange Pippin, The Queen, the old King, Loughfield Seedling, apparently a cooking sort; Chelmsford Wonder, very clean, bright-looking

If, beyond these measures you cannot do anything, if the border is a deep one, i.e., three or more feet, it may be prudent to search for the extremities of the main roots, and if these are found to be deep in the soil, trace them back for some distance and lay them at higher levels, but not all on one plane. If the soil is found to be deficient in lime, or inclined soon to become adhesive, mix lime rubble with the disturbed portion before returning it to its place, or partially re-make the border with new materials. The Museat of Alexandria is a variety that requires a warm, well-drained border, as well as more top-heat than most other varieties, hence a check is often given to it by causes which have no injurious effects on harder ones, as seems to be the case in your vineries adjoining the Museat-house, filled with Lady Downes, Gros Colman, and Black Hamburg.

MUSHROOM: *L. E. Vos, Agaricus arvensis.*

NAMES OF INSECTS: *J. M.* That on the Pear-leaves is the Pear-tree slugworm (*Scandaria atra*), the larva of a species of Sawfly. It is a very destructive species, and you should spray your tree in early summer with Paris-Green (poison), at the rate of 2 to 3 oz. to 20 gallons of water. The other insect is the chrysalis of the large Cabbage White Butterfly (*Pieris brassicae*). Destroy all that you can find if you wish to save your crop of Cabbages next year. *L. R.*

* * * NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTICE: We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and generally involves some inconvenience, and a large expenditure both of time and money on our part. Delay is unavoidable. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: *J. F. S.*, 1, Autumn Nolis; 2, Duchesse d'Orléans, a variable Pear as regards quality—in some districts it is first-rate, in others almost worthless. The Apple is Caroline. *J. C. Derron*, Excellent specimens, which reached us in fine condition. 1, Hanwell Sauring; 2, Winter Codlin; 3, Calville Rouge d'Hyver; 1, Sops in Wine; 5, Boston Russet; 6, Winter Greening. *J. E. S.*, 1, Calville Maltinge; 2, Hornead Pearmain; 3, a small example of Waltham Abbey Seedling. *G. B.*, Apples: 1, Harvey's Wiltshire Defiance, of which we occasionally have examples from yours and neighbouring counties; 2, Colham, or Pope's Apple, which closely resembles Blenheim Orange, but differs in some important particulars; Pears: 1, Swan's Egg; 2, Suffolk Thorn. *G. A. J.*, 1, Bedfordshire Foundling; 2, Gloria Mundi; 3, Calville Rouge d'Antoine. All the fruits sent were under average size, and scarcely in character as is the case with the Apples from many districts this season. *J. Brockelhurst*. It is impossible to name such diseased Pears with certainty, but they resemble Bourré d'Amaldis, which in some soils is much subject to the attacks of the scab fungus from which yours are suffering. Spray with Bordeaux Mixture as frequently advised. *G. E. M.*, Beauty of Kent. *W. A.*, Your specimens were all handsome, and most carefully packed. If all correspondents would take the same care, it would assist us greatly, and ensure prompt attention. 1, Kerry Pippin; 2, Washington; 3, Emperor Alexander; 4, Fall Pippin; 5, Dummoire; 6, Vincuse. *R.*, Bourré Superfin. It may be considered an old Pear, for it has been in cultivation here and on the continent for at least sixty years. *C. J. D.*, 1, Northern Greening; 1, Calville Blanche d'Hyver; 5, Adams' Pearmain; 6, Bourré Hardy; 2 and 2 were not in a condition for determination. The appearance of fruits is much altered by soil and situation, and we know your position is a difficult one. *J. D.* We are glad you apologise for send-

ing such a specimen, the only character available is the "eye," and alone that is an uncertain guide. It resembles Bourré Superfin, which as you say, is a fine Pear of French origin; 2, Comte de Lamy? Yes, the Autumn Bergamot is suffering from a bad fungus attack; spray as suggested. *—F.*, 1, Bismarck; 2, Golden Noble; 3, Gascoigne's Scarlet Seedling; 1, Baumman's Red Winter Reinette. *D.* We should think your Apple is of local origin. It has been compared with a large number of Scotch Apples, several of which came from your establishment, but though two or three resemble the specimen sent, they are not identical. We have retained the fruits for further comparison, and if possible we will give you another reply later.

NAMES OF PLANTS: *X. Y. Z.*, Limes: 1, *Tilia americana*; 2 and 3, *T. petiolaris*. Acers: 1 and 1, Acer palmatum; 2, *A. campestre*; 3, *A. platanoides variegatum*. — *Morgate, Brillington*, 1, *Junia dysenterica*; 5, *Atriplex rosea*; 6, *Critillum maritimum*. — *G. S.*, *Dreuxbury*, 1, *Rhus typhina*; 2, *Robinia pseudo-acacia*; 3, *Pyrus aucuparia*, Mountain Ash; 1, *Aspen Poplar (Populus tremula)*; 5, *Pyrus Aria*; 6, *Erica mediterranea*. — *C. S.*, 1, *Taxus baccata distigata*; 2, 3, and 4, all forms of the common Yew (*Taxus baccata*); 5, *Thuja gigantea*; 6 and 7, forms of *Cupressus Lawsoniana*. — *W. P.*, The true Service, *Sorbus domestica*. — *J. Ward*, 1, *Corchorus (Kerria) japonica*; 2, *Rondeletia speciosa*. — *P. G. X. Y.*, 1, 2, 3, 4, 5, 6, all forms of *Cupressus Lawsoniana*. — *W. O. Marton*. A very good variety of *Cattleya Dowiana aurea*. In obtaining it as *Cattleya Warscewiczii* the advantage was on your side. — *W. S.* Both distinct forms of *Cattleya Dowiana aurea*. — *Schwab*, *Guizotia abyssinica*; the species is uncertain in its flowering, and often attains a height of 1 ft.; your plant at 2 ft. appears, therefore, a dwarf variety, and to save disappointment you should try and secure seeds from your own plant, or increase it by means of cuttings. — *H. W.*, 1, *Polygonum cymosum*. — *J. B.* We cannot name the *Polargoniums*; 4, a garden form of *Bouvardia*; 6, *Acacia*, send when in flower.

NOTE TO QUIT: *A. J.* You are entitled to one week's notice or wages as a journeyman, not a fortnight.

ORCHID FERTILISATION, &c.: *H. Thorp*. The matter will be receiving our attention shortly.

ORCHIDS: *J. R.* If the Orchids you name are not growing in wholesome or suitable materials, you had better either put them forthwith, or wait until early spring-time. The best sort of material is turfy peat and sphagnum-moss. If it is decided to defer re-potting until the spring, the plants and pots, as well as everything around them, should be cleaned. This treatment holds good of all Orchids at the present season.

PRUNING SYCAMORES FOR GROWING INTO TIMBER: *J. S.* In order to get the trees to run up quickly, with straight marketable boles, they must be planted at 3 feet, or at 6 feet apart with larch or other nurse plants alternately; and at 6 feet apart they should be left to make their growth. Left to itself with room for much lateral development, the Sycamore makes a 6 to 10 feet bole and a great crown of branches, useless for any sort of purpose excepting as firewood. Planted in the manner indicated, Nature does all the pruning that is necessary, excepting the reduction of leaders, where two or more occur. The trees on the outside of the wood will retain their branches and keep sun and wind out of it, and growth would be quickened if a triple line of *Pinus Pinaster* or *austriaca* were planted on the outside.

PINKS WHOSE ROOTS ARE INFESTED WITH GREEN APHIS: *T. Martin*. Apply soapsuds or lime-water (clear); neither will hurt the plants.

PURCHASABLE LECTURES ON GARDENING: *A. B. C.* Your wants would doubtless be met if you were to advertise them in these columns.

SMALL INSECTS ON PALMS AND ORANGE-TREES AT

CANNES: *J. T.* There are two species. That on Orange is *Aspidiotus aurantii*, known in some parts of the world as the "Red Orange Scale." It is destructive to Citrus-trees in the Mediterranean area, in the United States of America, Ceylon, Australia, and New Zealand. The species on the Palm is *Aspidiotus dictyospermi* var. *arceae*, a much less common species, but which sometimes occurs in great numbers, and is then very destructive. Spray both trees when dormant with the following: soap, 1 lb.; paraffin, 2 gallons; soft water, 1 gallon. Boil the soap in the water until thoroughly dissolved, and while still hot add the paraffin, and churn with a syringe until a creamy mixture has been obtained. Add nine times the quantity of water, and again churn with a syringe. This is thoroughly safe for bark application, and for such comparatively tender wood as the young branches of Peach, &c.; but for safety, test the mixture on a branch of the infested tree. Apply mixture with a Stott sprayer, making two applications with an interval of three weeks between. If you could also apply a soap emulsion at the period when the young scale are active, and unprotected by the scale-like cover, it would be much more effectual than applications made at any other time. According to recent investigation, hydrocyanic acid-gas is most fatal to all kinds of "scale" and "mealy bug"; and judging from the very badly infested condition of the leaves submitted, would give most satisfactory results. The proportions are: 1 oz. (by weight) cyanide of potassium (58 per cent. pure); 1 oz. (fluid measure) sulphuric acid; 3 oz. (fluid measure) water to every 150 cubic feet of space enclosed. But if you think of applying this, you should carefully read Prof. Johnson's valuable paper on the methods of applying this very deadly poison which is given in the *Journal of the Royal Horticultural Society*, vol. xxvi, Parts 1, 2, p. 80.

VINES: *F. Briggs*. The Vine-border must be in a bad condition, and the fact of it being in a low situation makes it probable that it has suffered from lack of drainage. You must dig down to the bottom in a few places, and ascertain the state of the soil. Top-dressings in such cases do no good whatever. The bunch sent shows a sort of shanking, but the fruit has not as yet got into the sour, watery state, owing to its being dead ripe before the fruit-stalks dried up; hence, full of sugar.

VIOLETS: *Henry Gandy*. The blotches on Violet-leaves caused by a fungus—*Phyllosticta Viola*. No more harm will be done this season now, but diseased leaves must be gathered and burned. This disease only appears when Violets are grown in too rich a soil. Blotches on Cyclamen-leaves caused by a mite; fumigate with XI-Al. *G. M.*

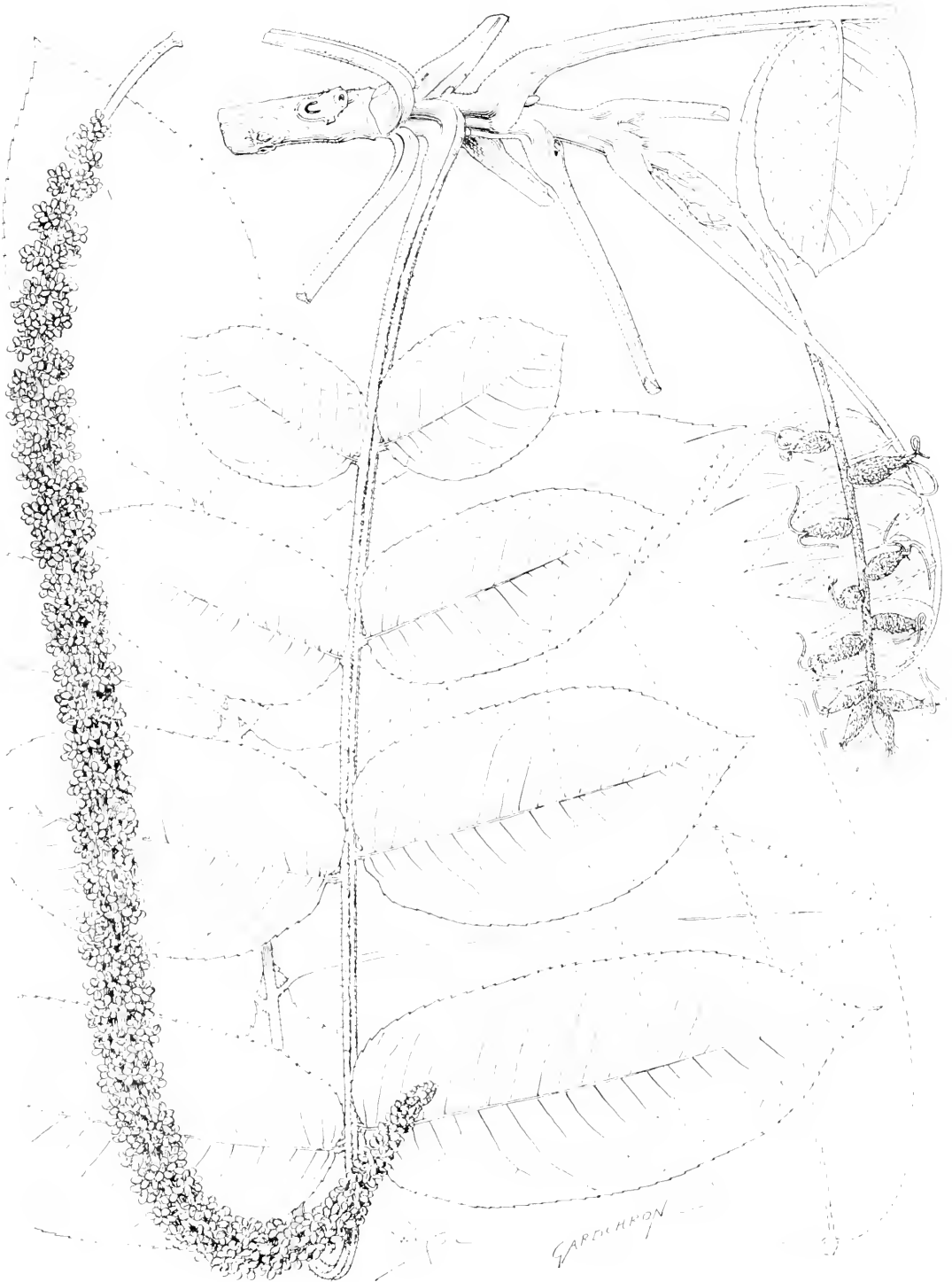
VIOLETS FOR SALE: *T. J. C.* We are unable to recommend salesmen. As you reside only a short distance from town, you should come up and make a bargain with a market salesman to take all that you may have to sell during the winter.

COMMUNICATIONS RECEIVED.—*H. Coleby*, too long for publication now. — *W. R. Howie*, *Kinderley*. — *W. E. G. D. R.*—*E. Benary*, *Enfield*. — *M. S. Photograph* with thanks. — *C. B. J.*, *E. H. J.*—*C. Herman Payne*—*Johnson*, *Dymond & Son*. — *B. W.*—*J. Guttridge*, *D. L. Mel*. — *Pellexen & Morrison*. — *D. Roebuck*. — *F. Q. C. E.*, *M. J. O.E.*. — *W. E. B.*—*E. T. Grahamstown*, *S. A.*—*H. W.*, *Ceylon*. — *G. W. C. W. D.* — *E. C.*—*E. J.*—*D. R. W.*—*W. Snelgar*. — *G. B.*, *Milne Redhead*. — *F. W. C.*, *W. A. S.*—*R. H.*—*G. B.*—*A. M.*—*F. E. H.*—*D. R. W.*—*W. W.*—*Farnum*. — *J. T. C.*—*C. H.*—*Sp. Perival*. — *M. P. R.*—*Chas Jones*. — *G. H. S.*—*V. B.*—*W. C. L.*—*A. H.*, *Dundee*.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE." IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

427 TREBLED.

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



JUGLANS CORDIFORMIS, JAPANESE WALNUT.



THE
Gardeners' Chronicle

No. 774.—SATURDAY, OCT. 26, 1901.

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ADELAIDE BOTANIC GARDENS.

AMONG the famous botanic gardens of the Australian continent, that at Adelaide ranks among the foremost. We are indebted to the Director, Mr. Holze, for the illustrations given with the present issue, and the following account of the garden we take from Mr. J. H. Veitch's letter, originally published under the title of "A Traveller's Notes" in our own columns.

The Botanic Gardens at Adelaide, some forty acres in extent, were laid out by Francis thirty-five years ago, in half French half English style. The present Director, Mr. Holze (for eighteen years in charge of the gardens at Port Darwin, succeeded Dr. Schomburgk, an old correspondent of the *Gardeners' Chronicle*).

The main entrance is but a few minutes' walk from the centre of the city; the lower end adjoins the Botanic Garden Park (in planted area, 80 acres in extent, for the recreation of the people), whilst on either side the confines of the garden are determined by the domains of the hospital, lunatic asylum, and old exhibition grounds. From the heavy iron gates, shaded by a fine fruiting specimen of *Schinus Mollle*, a neat by-path leads to the Director's house,

prettily covered with *Bougainvilleas*, *Bignonias*, and Ivy-leaved *Pelargoniums*. Along the path, behind a blazing clump of scarlet *Nerine Fothergillii*, flowering *Abutilons*, *Gaillardias*, *Asters*, *Lonicera caprifolium*, *Hibiscus sinuatus*, &c., are various shrubs, including *Viburnum rugosum*, nearly 15 feet high and almost as much through; *Prunus Pissardi*; and the purple tubular-flowered *Jacaranda mimosifolia*, common in other parts of the garden.

Near the entrance is a *Ficus rubiginosa*, for 50 feet from the ground upwards, a mound of solid sombre green, its somewhat small branches radiating from eight main stems, several of which reach the utmost height of the tree. It is an impressive object; whilst immediately on either side are bushes of *Nerium Oleander*, the flowers past their best, attaining a height of 12 to 15 feet, with a luxuriance difficult to surpass. A centre-walk runs in a straight line through the entire garden, in and near which plaster-of-Paris goddesses are dotted about. Paths cross it at right angles, these subsequently merging into winding paths through the shrubberies, lawns and beds.

Passing to the right of the main walk, beneath a *Ficus baldensis* over 80 feet high, if thin in foliage certainly thick in cones, are many irregularly-shaped beds planted with shrubs, and margined with dwarf-flowering annuals, perennials, &c.; *Nerium* are frequent and good, and *Tecoma Smithii* with its bronzy-orange blooms, is very handsome. Many of the Australian *Myrtaceae* are represented by neat, dwarf specimens; a pair of *Juniperus chinensis*, about 35 feet in height; *Polygala grandiflora*, freely blooming; *Eugenia myrtilifolia*, and the South African *Calodendron capense*, are all noticeable. One of the finest of the numerous specimens of *Araucaria Cunninghamii* in the garden stands in this direction, in the centre of a circular lawn, edged by a broad bed of the dwarf-blooming *Chrysanthemums*, their buds now rapidly advancing. I noted in the shrubberies around, *Duranta Plumieri* and *D. Ellisii*, freely blooming and seeding; and some *Cereis siliquastrum* (attaining occasionally a height of 25 feet), in perfect condition. Behind the *Araucaria* is a lake, recently cleared out, lined with Weeping Willow, and with an island near the centre, chiefly remarkable for its magnificent Pampas-grass and *Arundo Donax*. On a hillock behind it, a North Australian *Ficus platypoda* can claim to be one of the largest and finest trees in the garden; and a row of *Gleditsias* edge one end of the lake, all the fine species of which, viz., *G. inermis*, *G. triacanthos*, *G. horrida*, *G. caspica*, and *G. sinensis*, do well. Those in question are good trees, 30 to 50 feet high, and bear numerous seed-pods.

Proceeding towards the centre of the garden from this point, many shrubs of distinctly decorative character are passed, *Hymenoporum flavum* from Queensland; *Calodendron capense* from Natal, thoroughly at home, a noble block of massive leathery foliage, 25 feet high; *Sophora japonica* in good condition, in this respect an exception to most Japanese plants, to which the hot, dry winds prove fatal; also *Ilex cornuta*, and various others. The tallest, *Agathis robusta*, 45 feet high, occupies the centre of a grass-plot near a *Grevillea robusta*, 40 feet high, a perfect picture of a lawn tree. *Casu-*

aria striata, upwards of 60 feet high, next arrests attention, shading an *Araucaria Bidwillii*, rare in its peculiarity of being clothed with leaves only at the extreme ends of the branches; then *Broxia madagascariensis*, scarcely recovered from recent transplantation; *Pittosporum crassifolium*, *Olea obtusifolia*, *Clodendron glabrum*, and *C. tomentosum*, a fine massive specimen of *Pinus Saluberrima*, and a neat square bed of Proteaceous plants, are all within a few yards, and lay on the way to the next lake. The plots of lawn referred to are, with two exceptions, of Buffalo-grass, soft, verdant, and thick. The two exceptions are Couch, which is apt to prove a failure, For Ryegrass the climate is naturally too hot and dry.

The lake, one of four, connected by a winding creek, full in winter, but requiring to be fed from the waterworks during the remaining months, gives the impression of having been formed to obtain soil for filling up or levelling purposes elsewhere in the garden. *Robinia inermis*, with thick, close-set heads on dwarf six-foot stems, encircle one end, proving neat and effective. The main walk is here again reached, and near it is a good specimen of that graceful *Conifer*, *Cupressus funebris*, and a *Dombeya mollis*, noticed by Mr. Holze for its fine, coppery-coloured foliage in winter. To the wanderer through the garden the section to the left of the trunk walk would probably prove the most attractive. Near a good bed of *Yuccas*, *Agaves*, *Aloes*, *Cotyledons*, *Draecena Draco*, &c., the most noticeable feature of which at the moment being the numerous weeping racemes of a *Yucca filifera* on a fifteen-foot stem, is a triangular corner containing a perfect specimen of *Jubaen spectabilis* with a stem quite six feet in diameter. Surrounding it are flowering shrubs, &c., *Salvias*, *Plumbago*, *Antirrhinums*, *Veronicas*, *Apylegias*, *Hibiscus*, &c.; facing it are the now empty bulb beds; a class of plants in which the collection is rich. In this quarter the lawns are more open, bedding-out it resorted to, familiar objects being those plants used with us for the same purpose. Especially, however, would I mention *Zinnia linearis*, neat, dwarf, very free; its blooms of a soft orange colour. A bed devoted to *Sedums*, and another to *Echeverias*, are features; and the bushes of *Banksian* Roses, solid square yards in extent, are very fine.

The show-houses, a range consisting of two stoves, two greenhouses, and two ferneries, face this portion of the garden. In addition to the ordinary *Caladiums*, *Coloms*, *Eucharis*, and the various flowering plants employed to keep them bright and gay, are some good plants. Of *Asplenium nidus* there are two specimens with leaves 3½ feet long; *Platyterium grande* in large plants, and *P. alceiforme*, are very good, the ferneries generally being pretty and tasteful.

Amongst the Orchids in flower were *Zygotidium crinitum*, *Maxillaria Dantieri*, *Oncidium varicosum*, *O. incurvum*, *Cypripedium calceolatum*, *Epidendrum prismatoearpum*, *Cymbidium giganteum*, *Lycaste aromatica*, *Cypripedium Crossianum*, *Cattleya Bowringiana*, *C. bicolor*, &c.

Amongst the Palms in the stoves were fair-sized specimens of *Araucaria aculeata*, *Stevensonia grandiflora*, *Arenga saccharifera*, *Kentia Lindeni*, *Thrinax barbadosensis*, *Kentia*

Luciani, Hyophorbe Verschaefelti, Caryota sobolifera, &c. In the stove some of the Aroids were of equal quality, and the collection of Anthuriums is good, including *A. hybridum*, *A. Mooreanum*, *A. Warocqueanum*, *A. crystallinum*, *A. leuconeurum*, *A. Ferriense*, and *A. cordifolium*. The old Palm-house contains two gigantic *Pandanus utilis*, a few *Cocos* and *Livistona*. Connected by the wall, literally hidden by the small close-growing *Bignonia gracilis*, a small museum of woods is reached, testifying to the acknowledged ability of Dr. Schomburgk as a collector.

Leaving the houses, we pass a circle of seven Lombardy Poplars, a relic of the days when the Botanic Garden served for zoological purposes also. The trees were planted to shelter bird-cages, &c., and descend a low grassy slope, relieved by a gorgeous bed of *Pelargoniums*, at the foot of which the Lily-pond is reached. The inevitable *Venus* rises from the waters in orthodox form; guarded on either side by strong clumps of *Papyrus antiquorum*. *Cyperus alternifolius*, &c., she is apparently interested in the growth of *Nymphaea alba*, *N. blanda*, and *Nuphar luteum*. *Aponogeton distachyon*, *Villarsia reniformis*, *Pontederia crassipes*, and some others, are all in splendid condition. Here, as on the island in the adjacent larger lake, the Pampas-grass is exceedingly fine.

Amongst the chief features of the garden are the Willows, on the extreme edge of these lakes. Rising 40 to 45 feet, and planted many years ago, several dozen of fine trees (unfortunately getting hollow, and occasionally losing branches in storms), form curtains of pale green, even to the water's surface. It needed no further inspection to assure one of the great care bestowed upon these gardens, a fact that speaks volumes both for the Superintendent and for the people of Adelaide, the more so when the natural dryness of the climate is considered.

NEW OR NOTEWORTHY PLANTS.

CEROPEGIA LUGARDE, N. E. Brown.

This novelty was discovered by Mrs. F. J. Lugard, in December, 1898, on the Kwebe Hills near Lake Ngami, and seeds of it were presented by Capt. E. J. Lugard in 1900 to Kew, where it is now in flower. It belongs to the same group as *C. Thwaitesii*, but is very different in the colour of its flowers.

Stem twining, 1-4 lin. thick, with internodes 1½-5 in. long, glabrous, faintly glaucous-green. Leaves thin, herbaceous, spreading; petiole terete, channelled above and puberulous in the channel; blade 1-2 in. long, ½-1 in. broad, oblong, usually very obtuse and notched at the apex, with an apiculus in the notch, or occasionally bluntly-pointed and apiculate, cordate, subtruncate, rounded or somewhat cuneate at the base, flat or wavy, glabrous on both sides, very minutely ciliate on the margins. Peduncles sublateral at the nodes, 1-1½ in. long, glabrous, bearing 3-6 flowers, which develop one at a time in a subumbellate manner. Pedicels 3-6 lin. long, glabrous, green, spotted with purple towards the apex. Sepals 1½-2 lin. long, ½ lin. broad, subulate, glabrous, green, dotted with purple. Corolla about 1½ in. long, white at the very base, very light green on the inflated part, then white, passing into sulphur-yellow on the upper part of the tube and lobes, spotted on

the outside of the tube with purple; inside the tube is of a very rich blackish-crimson on the lower half, sulphur-yellow above, with the purple spots on the outside faintly showing through. The tube is about 1 in. long, abruptly curved immediately above the globose-ovoid inflated base, which is about ½ inch in diam., above it is cylindrical, dilating at the apex into a funnel-shaped mouth ½ inch in diam.; the lobes are 9-10 lin. long, connivent-erect, ciliate at the tips, broadly deltoid at the basal half, linear-spatulate in the upper half,

JUGLANS MANDSHURICA.

This species (fig. 93) is a native of Amurland, and is one of the hardiest of Walnuts. In the Northern United States, and in Canada, it has been recommended as a nut-bearing tree in districts too cold for the common Walnut. In this country its value will probably consist in its ornamental character alone, the foliage being of unusually large size, but similar in character to that of *J. cordiformis* and *J. Sieboldiana*. I gathered a leaf the

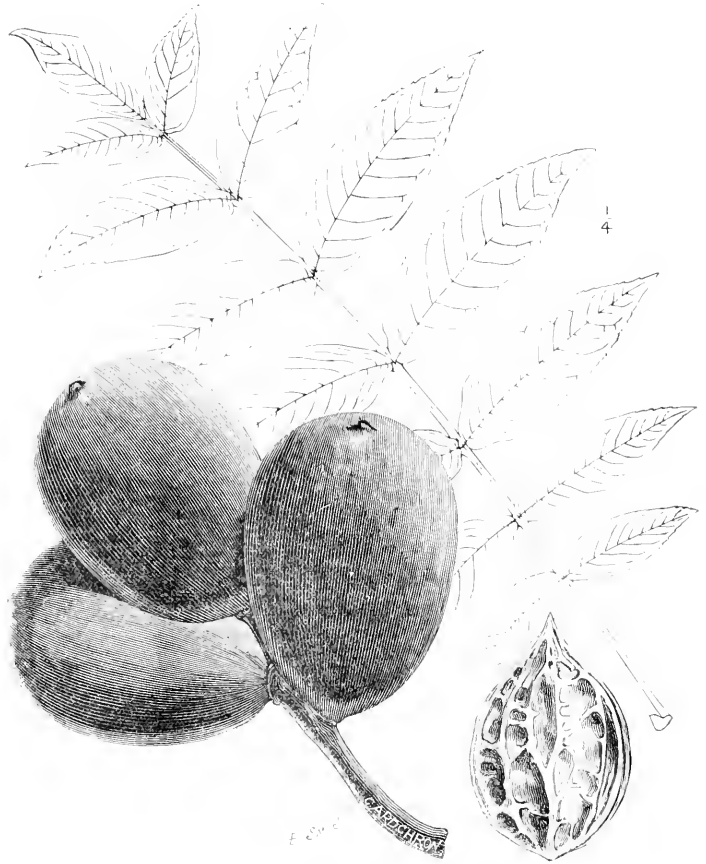


FIG. 93.—THE MANDSHURIAN WALNUT.

(Fruits on the left side, the leaf usually reduced.)

replicate, ciliate on the margins and on the lower part of the keel inside with very fine white hairs, which hairs extend down the upper half of the tube inside, and are also present within the inflated part at the base. Outer corona cup-shaped, 5-lobed; lobes about ½ lin. long, deltoid-ovate, bifid to nearly halfway down, with parallel teeth, dark purple-brown, covered with long, white hairs on the inner face. Inner coronal-lobes 1½ lin. long, standing high above the staminal-column, rather stoutly biliform, obtuse, connivent-erect, with recurved tips, hairy and of a purple-brown colour at the base where adiate to the outer corona, glabrous and yellow above, with purplish tips. N. E. Brown.

other day 3 feet in length, the largest leaflets being 7 inches long by 3 inches wide. The fruits and nuts, however, differ considerably from those of its allies, as may be seen by a reference to fig. 93, where a cluster of fruits is shown. They are somewhat top-shaped, and the nut is drawn out to a blunt point, eight-angled, and deeply pitted. As a nut for eating, it is said to be inferior to the common Walnut, but it ripens earlier, and from six to thirteen are borne in a cluster. It is probably better adapted for countries with summers hotter than ours, although perhaps of shorter duration. Fully-grown trees are said to be very similar to *J. cinerea* in habit.

JUGLANS NIGRA (BLACK WALNUT).

Next to the common Walnut, this is the best known of the Walnuts (see fig. 91). Its nuts are of no value, but regarded as an ornamental tree it is superior to *J. regia*, being indeed one of the most striking of deciduous trees represented by fully-grown specimens in this country. It was one of the earliest trees to be introduced from North America, and has

recommended for planting for profit as a timber tree in this country, but I have not heard that successful results have been obtained. In North America, however, it produces a timber of admirable quality. From *J. cinerea*, its near ally, it differs in its globose fruits, produced never more than two together, and its much smoother leaves, *W. J. Bean*.

find in the hedges, is undoubtedly very considerable every year, but the number of fatal results is probably very small. There is no doubt that mishaps might be considerably reduced if our country clergy, schoolmasters and school-mistresses, knew something about wild flowers, and could distinguish between poisonous and harmless plants.

"It is the object of this book to enumerate

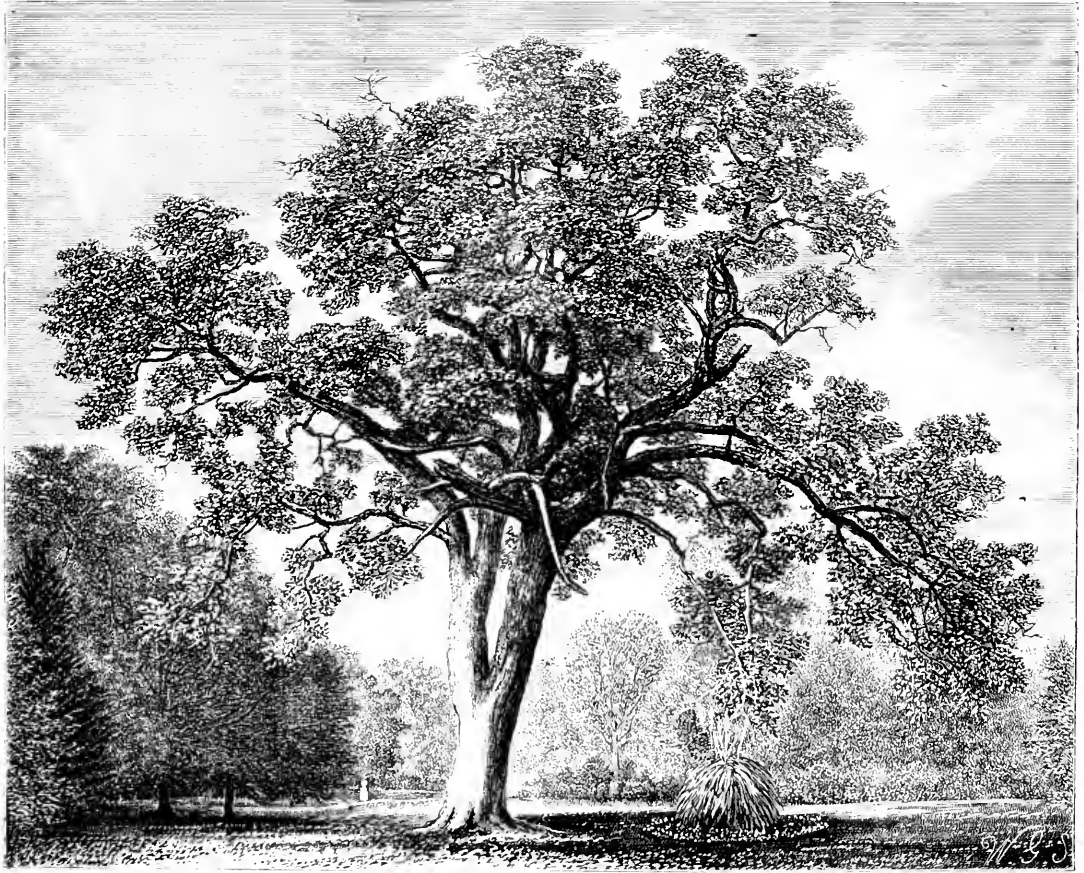


FIG. 91.—*JUGLANS NIGRA* AT FULHAM PALACE, INTRODUCED BY BISHOP COMPTON.

been cultivated in Britain for two-and-a-half centuries. In the United States it sometimes attains a height of 100 feet, and in England it has reached 80 feet. Its leaves measure from 12 to 21 inches long, and are composed of from about a dozen to twenty-one leaflets. Frequently the terminal leaflet is missing and the number is even. The largest of these leaflets (those in the centre) are 4 to 5 inches long. They are of ovate-lanceolate outline, almost glabrous when mature, and the margins are set with shallow, rounded teeth. The fruits, which are borne freely in South Britain, come singly or in pairs, and are globose. The nut is one inch wide, somewhat more in length. The Black Walnut has been

BOOK NOTICE.

POISONOUS PLANTS IN FIELD AND GARDEN.
By the Rev. Professor G. Henslow, (Society for Promoting Christian Knowledge, Northumberland Avenue, London.)

The author takes his poisonous plants according to the sequence of the natural orders, beginning with the styledous and ending with monocotyledons. Among the members of these two great orders he finds many plants that appear to him to be rightly described as poisonous.

Mr. Henslow says that, "The number of children who are made more or less ill by eating berries and leaves, &c., which they

and describe such of our common wild plants, as well as some frequently cultivated, which are at all likely to prove harmful to our little ones, who are only too apt to put everything which appears attractive into their mouths."

Descriptions are given of the dangerous species, and various antidotes are prescribed, so that at last we wonder whether an account of harmless plants would not have been shorter to compose! It is fortunate, considering the perils that apparently surround them, that children do not more often fall victims. Perhaps the acid taste which causes many a tempting-looking mouthful to be hastily rejected, acts as a protection against poisonous effects.

Fungi are, we should imagine, a common source of poisoning, but these are dismissed in a few lines, recommending that children be forbidden to touch any Toadstool they may find growing. For their absolute safety, this simple rule might be carried still further, by limiting their hedge-row meals to Blackberries, and to the comparatively few other really palatable wild fruits, urging moderation even in these.

In our experience, Laburnum-pods and seeds are the most frequent sources of serious danger, but we never heard of cooks making use of them instead of false Acacia, in soups! The use of Aconite-root for Horseradish is, strange to say, a not very uncommon cause of poisoning.

In cases of poisoning by vegetable substances, the proper course is obviously to get rid of the offending substance as quickly as possible. This can be done while the doctor is being called. On his arrival, he will know the proper course to follow to neutralise the effects of the injurious substance, or combat the symptoms which arise. A mustard emetic is the simplest and most readily accessible remedy for vegetable poisons. If strong acid or corrosives have been taken, emetics must, of course, not be used, but copious draughts of milk and other diluents.

Professor Henslow cites the authorities from whom he has derived information, but whilst mentioning a few whose names carry relatively little weight in such a matter, he omits reference to Taylor, Pereira, Lindley, and Koyle, as well as to those works on medical jurisprudence in which the subject of poisoning is treated. The book contains numerous illustrations, and is adequately indexed.

JAPAN.

I BEG to send you herewith a photograph showing a Fern-ball made of Davallia bullata. These fern-balls have in later years been exported in large quantities to America, and I hear that the article has also been taken up in England.

It is without doubt a very beautiful ornament for the house, veranda, or any place in the garden where there is shade. The structure, so to speak, is made of sphagnum-moss, upon which the Fern roots are closely tied. The string used for tying is made of Chamærops-fibre, which has the advantage that it does not rot, at least not for a number of years. The culture is the easiest possible. In spring they are dipped in water, and hung up anywhere in the shade; after that they must be regularly syringed or dipped, and after a short time the young fronds will appear, and form a regular-fern-ball. In autumn the leaves will begin to turn yellow. This is a natural sign that their vegetation period has ended, and the supply of water should be stopped. They will lose all their leaves, and must be allowed to dry off perfectly, and are kept during the winter in a frost-free, dry place.

The next spring the same process is repeated, and then the growth of the Fern-fronds will be even better than in the first season. So treated, these fern-balls can be kept for four or five years, until the moss and string begin to rot.

As said before, they have been taken eagerly up by the American public, and my firm has orders in this year for over 100,000. It is of great importance for their commercial value that they travel with perfect safety, and that their culture is the easiest, and lastly, that they are very cheap.

Besides these Fern-balls, we are making also some other designs, of which I am also send-

ing you a photograph. The upper long design, re-producing my firm's name, is now, with the fronds all out, rather indistinct. A very beautiful design are the little temples, and in America the monkey design is very highly appreciated. Alfred Unger, Proprietor, L. Boehmer & Co. [It is not necessary to reproduce the photographs, as we have at various times given illustrations of them. Ed.]

PLANT NOTES.

PLANTS FOR WINTER-FLOWERING.

It is now very important that the *Salvias*, *Eupatoriums*, and *Callas*, which gardeners plant out of doors in the month of May, should be lifted with care and potted. They may then be stood on a coal-ash floor on the north side of a building or garden wall, and syringed twice or thrice daily till having recovered from the removal they can withstand sunshine without flagging. I find that it is always an advantage to afford water plentifully to the soil a few days before removing the plants from the ground, and to afford a thorough soaking of water when potting is finished. In some cases it is necessary to place neat stakes in order to prevent breakage by wind or rain. For years I have practised the planting out of several kinds of winter-flowering plants out-of-doors, and find my reward in the saving of labour in the summer months, and great floriferousness. *H. Markham, Wrotham Park.*

DAHLIA MERCKII.

There may have been noticed in flower in the herb garden at Kew a plant of *Dahlia Merckii*, a small single-flowered species from Mexico, and probably one of the fairest of this great tribe of plants. Characterised generally by large flowers, and so far as the florist's forms are concerned by somewhat conspicuous colours, there is here something just the reverse. Dainty almost in the soft rose-mauve tinted flowers, that are about 1½ inch across, and slightly cupped, there is a slenderness of habit that cannot be overlooked. For cutting, the flowers would be as charming as they are graceful and pleasing. The height of the plant is about 3 feet. *E. J.*

MONTHERIA CROCOSMIFLORA.

Some well filled beds of this plant at Kew, near the Palm-house, have been resplendent with flowers, and I do not remember to have observed finer masses. These are 10 feet in diameter, the spikes rising in immense numbers from the lance-shaped leaves. I noted that at Kew, in opposition to the practice in some gardens of repute where effective masses are required of some such plant as this, the surface is 2 inches below the level of the greensward. In this way water may be effectively afforded. It is otherwise when a bed is mounded in the centre, and much of the water runs off to the sides. *J.*

ORCHID NOTES AND GLEANINGS.

PHALANOPSIS LOWII.

THE collection of *Phalenopsis* in Lord Rothschild's gardens at Tring Park is one of the oldest, and contains some of the finest specimens. Occasionally they show sufficient signs of waywardness to cause Mr. E. Hill, the head gardener, some anxiety, but as regularly are they tidied over the critical time. Perhaps the best evidence of good cultivation is to be seen in the little hatch of *Phalenopsis Lowii* which have been at Tring Park many years, and produce annually a good show of flowers at the present season. It is a plant of very

small growth, and the flowers, some 2 inches across, seem extraordinary, considering the size of the plants. It is grown on a ledge near the glass end of the house, in which position it can to a certain extent be acted on by the changes of temperature outside. Mr. Hill remarks that one variety regularly loses its leaves annually, while the other does not.

A VISIT TO THE NORTH.—III.

(Continued from p. 281.)

ARDGOWAN HOUSE.

THE weather had not been particularly good at Rothesay, drizzling rain had fallen at intervals, but in spite of this we entrained at Wemyss Bay for Inverkip, the nearest railway-station to Ardgowan. The residence of Sir M. Shaw Stewart, Bart., is one of the greatest interest to a horticulturist, for everything is maintained in a manner that compels the visitor's admiration. The house itself has an imposing appearance, is built of stone, like almost all other West of Scotland mansions, and commands views of exceptional beauty; whilst the adjoining English church, whose services are open to all parishioners, is exceedingly interesting.

On the south-west front of the residence, where there is a well-kept flower garden, we noticed the true Tom Thumb Pelargonium, quite a stranger now-a-days; also grand clumps of *Rhododendron ponticum*, handsome trees of Cedars, Sequoias, &c. There is a magnificent broad terrace walk, just in keeping with the place, and a view unsurpassed for beauty, of the bay, where may be seen the Clyde boats steaming over the restless water. Nor is the view from the north-east side a whit less beautiful. In one direction you look over Hunter's Quay, and to the right are thickly wooded hills that extend away until they appear to embrace the sky. These are divided by a pretty valley also covered with fine timber trees. From the tower here a view is obtained over more than half of the county (Renfrewshire). Near to the house is a fine breadth of lawn, excellently cared for, and of that intensely green colour peculiar to northern districts. There is no feature in Scottish gardens that attracts the attention of southern visitors more than their beautiful lawns. They seem always greener than our own lawns are.

On either side of a window with a S.W. aspect there are Myrtle plants 10 feet or 12 feet high, which were raised many years ago from cuttings obtained from the wedding bouquet of Sir Michael's mother. They are against the wall, and are matted up in the winter-time.

A noticeable feature of the pleasure grounds are the closely-trimmed evergreens. There are great Yews, similar in shape to a horse-shoe, with a garden-seat in the recess so formed; also other stone-like hedges, &c., that the late Duke of Devonshire used to term "evergreen buttresses."

No good Scotch garden lacks its herbaraceous border, but not all of them are so interesting as that at Ardgowan. How strongly all the plants were growing! Sedum, indeed, do we see such vigorous plants in Surrey, and never except after lavish expense. But here it is quite natural, and is not due to carting loam into the borders. The Galtonias, Marigolds, and Colchicums were particularly gay with flowers.

Ardgowan is a very large country residence, with all the breadth and scope of such establishments, and it is a long way from London, but the collections of plants, even of some florist's flowers, are kept up to date, and the methods of gardening practised are very similar to those common in the trimmest gardens around

the metropolis. It was the first private garden I had seen beyond the Tweed, and I reflected that if Ardgowan was a type of Scottish gardens generally, the standard of excellence was very high. Border Carnations are valued, and careful cultivation is afforded them. The highest success is only obtained from the four varieties following: Mrs. Muir, white; Ruby Castle, Viscountess Melville, and Duchess of Fife. So if any reader is attempting the cultivation of Carnations in borders, in similar districts to Renfrewshire, he will do well to have these varieties.

THE KITCHEN GARDENS AND GLASS-HOUSES.

The kitchen-garden is longer than it is wide, runs from east to west, and is surrounded by good walls, except along the north side, where there is a range of glass-houses. Inside the walls the area is about three and a half acres, and there are vegetable crops immediately outside the walls to the extent of one and a quarter acre. The kitchen-garden is like all other departments, in that neatness and excellence are observable in everything. I have never been in a vegetable and fruit garden that afforded me more pleasure than did that at Ardgowan. With a spacious central walk through its centre, trimmed Yews, and a magnificent ribbon border, it is as ornamental as the character of the crops will allow, and the crops themselves, particularly the green crops, were grand.

As an instance of the thorough manner in which things are done at Ardgowan, I may mention the trellis erected for supporting the Pea-haulms. They are about 5 ft. high, of twisted wire, a double row about a foot wide to each row of Peas. The system answers perfectly, and there is no trouble. The initial expense was £111.

Raspberry-canes were exceedingly strong, and as much as 7 ft. high. The two best varieties at Ardgowan are Northumberland Filbasket and the well-known Superlative. Mr. McLeod remarked that the Northumberland variety did not succeed in his light soil and dry conditions at Dover House, Roehampton; but at Ardgowan it does, and is described as much better in flavour than Superlative, the favourite of most English gardeners.

I remarked upon the good quality of the Onion crop, and was amazed by Mr. Lunt's rejoinder that Onions had been grown on that particular spot in the garden for the past seventy-eight years, and that the present crop was sown on March 18 last. It was the opinion of Mr. Lunt's predecessor that Onions would not succeed in any other portion of the garden, and they do so well where they are that Mr. Lunt has accepted the friendly hint that was given him; and yet he and all of us nowadays believe in the value of the general principle of "alternation of crops." There are exceptions to everything!

The Strawberry-beds had been cleaned, the runners taken off, and a mulching of horse-dung applied. Quality in fruits is evidently appreciated at Ardgowan, for in reply to a question as to which varieties were most grown, the answer was, President and Keen's Seedling.

Before peeping into the glass-houses, for I shall not be able to describe them at length, I must again refer to the 200 yards ribbon-border that faces the range of houses, for it was done well, is a remarkable feature of Scottish gardens, and had as good an effect as a ribbon-border could produce. The plants used were *Alyssum saxatile* as edging, then a scarlet-flowered *Pelargonium*, next *Calceolaria ampliflexilis*, then *Ageratum*, and at the back a row of *Pelargonium* "Bijou."

The range includes four good-sized houses, with a porch in centre; and adjoining is a case covering a large tree of Brown Turkey Fig. The vinerys were in good condition, and the Grapes ripening well. Peaches and Nectarines left nothing to be desired. Favourite varieties were Preece de Consils, Pine-apple, Violette Rative, and Dymond.

In some pits were a nice collection of green-house *Rhododendrons* and a group of *Calanthes*. I cannot praise the *Calanthes* too highly, for Mr. Lunt succeeds unusually well in their cultivation. The pseudo-bulbs were nearly completed, and were uncommonly large. *C. Veitchii*, *vestita*, *v. lutea*, and *lutea oculata* were there amongst others, and I can imagine the glorious display these well-developed plants will produce in the clear air of Ardgowan.

The popular *Begonia Gloire de Lorraine* adorned eight large baskets, which in an intermediate-house will bear a profusion of flowers all the winter. Alternated as they were with excellent basket-plants of *Davallia*, and of *Asparagus Sprengeri*, the effect will be

hear of the Scotsman who went south and forgot to return. Well, Mr. Lunt went north and has remained north in one situation, the trusted servant of Sir M. Stewart, for the past forty-eight years. Upwards of half a century ago Mr. Lunt was employed in the gardens at Eaton Hall, Chester, under the late Mr. Collinson. He was there for seven years, and during the last three years held the position of foreman. When Lady Octavia, sister to the late Duke of Westminster, left Eaton upon marrying into the Stewart family, the foreman at Eaton went with her to be gardener at Ardgowan, where he has served faithfully through all the years that have since passed, and where he has received at all times full appreciation from his employers.

Two Royal Ferns that Mr. Lunt planted forty-seven years ago in great boxes, and other trees he planted in his early days at Ardgowan, serve to remind him of his length of service. The photograph on this page shows how hale, and straightforward looking an English gentleman Mr. Lunt is still, and I hope he may have many years of health before him. It is one of my most pleasant recollections of Ardgowan, that my visit there was the means of my meeting such a splendid representative of British gardeners. Mr. T. Lunt, of Keir, who cultivates and exhibits Grapes and *Chrysanthemums* so successfully, is a son of the veteran at Ardgowan.

On the return journey to Glasgow in the evening, the weather had made up its mind, and was thoroughly wet. P.

(To be continued.)

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

The keeping of the blooms in good condition after full development is an important matter to an exhibitor, or to any who wish to have good blooms at a certain date. One of the attributes of the flower is the relatively long period of time the flowers remain fresh-looking on the plants or as cut. In the south, an exhibitor loses many fine blooms annually through too early development; in the northern counties, the trouble is in many seasons non-development of the flowers in time for the shows. Those flowers which possess the darkest tints, such as chestnuts, bronzes, and deep lilacs, retain their freshness for the shortest time; and the primrose shades, whites, and yellows, especially the latter, continue the longest. In order to have the blooms in perfection at any given date, four or five days previously is quite soon enough to cut them, for if removed earlier the florets lose solidity, and as a consequence the blooms are reduced in size; a fact more noticeable in Japanese than in the incurved section, as the florets of the latter are of an uniform length, and afford support to each other. The flowers when cut should be perfectly developed, and before their freshness passes away. The commencement of decay can best be ascertained by feeling the lower florets; if these are not soft and baby, the flower is in good order. When decay has set in, the white flowers assume a pink or dull tinge, and in some other varieties a faint brown tint is observable in the bottom florets. When therefore the centre of a flower is fully developed, and the lower florets fresh, the bloom is at its best, and should be removed with a stem of not less than 12 inches in length, so that a small portion can be cut off every day. Place it in a bottle filled with water, to which a little salt is added. It



MR. THOMAS LUNT, ESQ.

charming. Fine collections of *Begonias* and zonal *Pelargoniums* were in other houses, and in small span-roofed houses some 12 feet wide was an excellent crop of Cucumbers; the plants were in large boxes of varnished oak, with an appearance good enough for a sitting-room. The varieties of Tomatoes most favoured are Sutton's Best-of-All, Sunbeam, and Austin's Eclipse. Mr. Lunt, in speaking of the exceeding popularity of the Tomato, said that previous to 1870 the late Mr. B. S. Williams tried to sell seeds in Scotland, and he afterwards said that the packet bought by Mr. Lunt was the only one he had been able to sell. In 1872, Mr. Lunt showed a collection of six varieties at an Edinburgh exhibition. But how would they compare with the fruits today! Violets, Cyclamens, and other plants in houses attracted my attention; but my concluding words must be some concerning—

MR. LUNT,

who may be regarded as one of the most successful and oldest gardeners in harness in Scotland at the present time. We sometimes

matters not whether the water be hard or soft. Place the blooms in a cool, dry, slightly darkened room. I prefer to leave the flowers on the plants till required, or at the least not remove them till two days before the show. When it is seen that a flower will be too early, growing as it is in the coldest greenhouse and protected from sunshine, the moment it is at its best let the plant be removed to the cool house, which can be partially darkened, and to which air can be admitted freely, a potting-shed, having a northern aspect, any cool shed, or a disused Mushroom-house, in fact any place having the necessary requirements—coolness, dry atmosphere, and partly-excluded light.

No more water should be afforded to the plants than is absolutely necessary to keep the leaves and flowers from flagging. The water which drains from the pots should be dried up, and if decay from damp occurs, cut out the injured florets, or they will communicate it to others. Flowers managed in this way will keep in good condition for ten or twelve days, and sometimes longer. *E. Molyneux.*

THE ROSARY.

THE ROSE OF THE SEASON.

It is remarkable how in some seasons a particular Rose stands out prominently above all others, appearing to do well and distance its competitors in all situations and soils; and I think that this year that honour must be accorded to that beautiful Tea Rose Maman Cochet and its white sport. We have, I think, a very safe ground on which to go in determining such a question as this, by referring to the exhibitions of the National Rose Society; at its three shows the judges are most carefully chosen, without any reference to those local influences which often determine the selection of judges, and consequently their decisions are very rarely questioned. Sometimes an irate and disappointed exhibitor says that they do not judge the Roses but the person who shows, inferring that the judges knew who he was, and were partial in their judgment. Of course, we know that this is all sheer nonsense.

On turning to the reports of the society it will be seen that there were six medals offered for the best Tea Rose at the show at Richmond, the Temple Gardens, and at Ulverston, and out of these five were awarded to Maman Cochet or her sport. Nor was this all; prizes were offered for the best stand of Tea Roses of one sort, and here again this Rose distanced all competitors, while in every winning stand of Tea Roses it found a place. It obtained at the Temple all the three prizes offered for nine blooms of any one variety of Teas; it also took the 1st prize in the same class at Ulverston; while I think there was hardly a winning stand of Tea Roses where it had not a place. The Rose itself was raised and sent out in 1893 by Cochet, and the white form, which was of American origin, by Mr. Cook in 1897. It has gradually been winning its way to the front rank, and has this year obtained the remarkable position that I have indicated; and yet, although it may be heresy to say so, I do not think either in form or colour it can approach Comtesse de Naxaillac or Souvenir d'Elise.

One reason of its success, I think, is its fine and vigorous growth. This is a point much more looked at now in Tea Roses than it used to be, and I believe we shall soon get rid of all "milky" growers which, despite the beauty of their flowers, are always a worry to the grower. What a delightful thing, for instance,

would be a strong grower producing the beautiful flowers of Ma Capucine, for I do not think any other Tea Rose approaches it in colour.

It is a curious thing how many sports come to us from America, from whence as far as my memory serves me, we have not received anything of value, so far as Roses are concerned.

There is one thing that must be borne in mind, so far as Maman Cochet is concerned, and that is, that it is a fine season Rose, and that therefore the two last seasons have been especially favourable to it; and I am inclined to think that in a dripping season it would hold a very different position. *Will Rose.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. GRAPMAN, Gardener to R. I. MEASTRES, Esq., Cambridge Lodge, Floudon Road, Camberwell.

The East Indian-house.—The species of Orchids which require the stove or East Indian-house treatment need careful management during the winter months. In most cases they are such as are suitable for growing with stove plants; due consideration being given to the season when the plants are dormant, or they will not flower satisfactorily the following season. Many species of *Vanda* and *Aerides* having now completed their growth, should be afforded slightly less moisture, and as soon as the points of the roots are wholly sealed over, only sufficient moisture at the roots and in the atmosphere should be afforded as will keep the stems and foliage in a normal state. Suitable positions may be afforded them at the cooler end of the house. Where a house is set apart for these plants, their requirements are more easily met, and little difficulty is experienced in their cultivation. Drip from the roof must be carefully guarded against; and if water collect on the plants it must be forthwith sopped up with a sponge, and when it has lodged in the centre of the growth, the plant must be placed so that the water will drain away. Before damping down, the temperature of the house should be at the normal standard; and this should be done sufficiently early to allow of the moisture becoming condensed before nightfall.

Phalenopsis.—The winter-flowering species now showing flower-scapes should not suffer lack of moisture at the roots, but beyond that excessive moisture in the materials should be avoided; the changeable weather of the next few months rendering it necessary to avert as far as possible any check to growth. In urban gardens, it is not so much the cold against which the plants have to be protected, but the sulphurous fogs and the lack of light. Complete rest cannot be afforded till the flower-scapes have been removed after the flowering is over.

Aurochilus and allied genera may be grown in a *Phalenopsis*-house if a place can be found for them where there is much moisture and the condensation is also great. The most satisfactory species under cultivation here are *A. Dawsonianus*, *A. Lowii*, *A. Petola*, *A. argyreneum*, and a few others of this class. I pot the plants in shallow pans, and repot annually when growth is beginning; and as the plants usually produce their flowers late in the summer, they are late in commencing to grow, and some of them do not grow early enough to permit of repotting being carried out till the spring. Whenever possible, I prefer to repot in the autumn. The plants require plenty of drainage-materials, and a compost consisting of equal portions of peat and sphagnum-moss, mixed with small bits of charcoal or crocks. Having repotted the plants and applied water, place them under a bell-glass or hand-light on staging that can be kept always moist. The plants may be increased by divisions of the rhizomes, which break satisfactorily under suitable conditions.

THE KITCHEN GARDEN.

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

Broccoli.—In some districts it will soon be necessary to lay down or heel-in this crop, for owing to much mild weather the plants have made late growth, and severe or sudden frosts would do them great damage. If they be partially lifted, this will check growth, and prepare the plants to withstand severe weather. Late plants that have not grown to their full size may be left undisturbed for the present. To "lay" the plants, take a spadeful or two of soil from the north side of each, not too near the stem, and bend the plant towards the ground facing north, covering the stem with the soil that is removed for the next plant, until the whole piece has been done. In our part of the country the work is not needed.

Cauliflower.—These are less hardy than the Broccolis, and must be protected in some form against hard weather, even in Devon. Bending the leaves over the curd will preserve it from a few degrees of frost; but the wisest course is to lift the crop, and plant it in cold pits, where the heads will keep fresh for a long period. Use the lights only when frost threatens, and then mat up securely. Plants from seeds sown in August should be put into frames or hand-lights, and kept as hardy as possible.

Salsify and Scorzonera roots may be lifted and stored similarly to Carrots, or allowed to remain in the ground until required, covering them with litter before hard weather sets in.

Celery.—Lift and store any remaining roots in a place out of the reach of frost. Chicory may also be taken under cover, trimming off all loose foliage, but preserving the heart-leaves, and stack them with moist soil or sand. It may be forced afterwards in the dark in ten days.

General Work.—Take full advantage of any fine day to stir the soil between all kinds of crops, raking off weeds, now that the sun is less powerful. Cut off decaying foliage from Brassica plants, and remove leaves and Pea-haulms from the ground. The latest-sown Peas have not done nearly so well as last season with us; there was so little sunshine during September. Collect all fallen leaves, and throw them into a heap for forming hot-beds. If pits and frames are used for these hotbeds, see that they are thoroughly cleaned and put into good order.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Priestwood Hill, Loughborough.

Himalayan Rhododendrons.—Those plants which, owing to the continued fine weather, have remained outside to this date, should be placed in the greenhouse, and be kept moist at the roots, not wet, or the flower-buds will drop. The javanico-jasminiflorum hybrid *Rhododendrons* should be afforded a temperature of 50° to 60°, and these being plants that flower at this season and during the winter, should be placed where the sunlight can reach them. Amongst the foregoing will be found some of the best plants for the decoration of the conservatory.

The Reserve Garden.—It is very necessary that plants which are taken from this adjunct to the garden should have had at the least a year's growth since they were last forced. After potting them in suitable soils, plunge the pots in a bed of coal-ashes out-of-doors, to be brought on successively as may be required. Turfy loam and peat and some leaf-mould and sand make a suitable potting mixture for most of the plants. It is well to remember that such plants should be placed in as small pots as the roots can be comfortably squeezed into, as liquid-manne can be afforded after growth is begun. When the days are mild and fine, overhead syringing may be practised with benefit to the plants till the flower-buds appear. Among plants that may be potted from the open ground for forcing are *Azalea mollis*, *A. m. flore-plena*,

Lilæe, *Kalmia latifolia*, *Deutzia gracilis*, *Rhododendron hybridum*, *Viburnum Opulus*, *Cercasus pseudo-cerasus*, and *Staphylea colchica*. Clumps of *Helleborus niger* may be put into cold frames. This is a plant which does not succeed if often removed, and established plants should be kept in tubs and pots undisturbed for years, save for the removal of the exhausted soil at the top of the ball. Newly-lifted plants should not be forced.

Lilium auratum, and *L. lancifolium* and *speciosum*.—The bulbs of flowering size may now be shaken out of the soil and re-potted. Root-action may have commenced, and careful handling be needed. Sort the bulbs into three sizes, and select the largest and best. Of *L. speciosum* for potting into 12-inch pots, eight to ten bulbs being put into each pot; those of the second size into 8-inch pots, six in each; and the smaller bulbs place in boxes, as being too small to flower for a year or two. *L. auratum* is best grown singly in 7-inch pots. A suitable compost for Lilies consists of turfy loam one half, leaf-soil one quarter, peat one quarter, and some coarse sand. The pots should be well drained, and the crocks covered with rough, turfy bits of soil. Half fill the pots with soil, and make firm by hand-pressure. Place a table-spoonful of sand where each bulb will lie, and cover with sand; put in soil to about two-thirds of the depth of the pots, and thus leave space for additional soil. Place the potted bulbs in a frame or under temporary shelter (slates, boards, &c.), and apply no water until growth becomes visible in the spring. The pots may be plunged in coal-ashes or leaves, which will have the effect of keeping the soil in a healthy damp state. If not otherwise secure against frost, place a thick layer of tree-leaves over the pots.

THE HARDY FRUIT GARDEN.

By C. HERREN.

Root-pruning of Apple and Pear trees.—This operation may now be carried out in cases where it is necessary to check gross, and the consequent unfruitful growth. After the recent rains the soil should be in a good condition for working, but if found to be dry, water should be afforded previous to the operation. Root-pruning at an early date in autumn has much to recommend it, the ground being then in a better condition for working and it is still warm, favouring an early re-establishment of the trees; and the wounds, even though large roots be cut through, soon heal and push forth roots freely in the coming spring. In the case of large trees, it is often advisable to carry the operation out over two seasons by going half way round the tree now, and the remaining part the following autumn. Begin by throwing out a trench of sufficient width to allow of free working to the depth of the lowermost roots, and at a distance of three to four or even more feet from the hole of the tree, according to its size. The soil should be gradually got away, working towards the tree, and up to within two feet of the bole, or closer, if necessary, burrowing under the ball to sever the tap roots. The smaller roots should be carefully preserved, and be tied together and temporarily covered so as to prevent excessive drying. All the roots should be brought upwards as much as possible, and the stronger ones shortened to within three feet of the stem, making the cuts from below upwards, and cutting the ends quite smooth with a sharp knife. If the land is in a wet condition through being inefficiently drained, some brick rubble may be placed in the bottom of the trench to the depth of four or five inches, and on this a little coal-ashes spread. The first soil thrown out may then be returned to the trench. As many of the roots as possible should be kept near the surface, laying them out radially in horizontal layers, covering the smaller roots with the finer portions of the soil. As the work proceeds, the latter should be made quite firm about the roots by a careful trampling, and the portion under the unreworked ball be made firm with a rammer, if it cannot be reached by

the feet. Should the land be deficient in lime, let some old mortar rubbish be mixed with the staple, but new loam should not be afforded. When finished, mulch the surface with strawy manure, and after waiting two or three days, afford a good soaking with water. If the work is carefully carried out, flower buds will be produced instead of wood buds, and fruitfulness once induced will tend to keep the tree fruitful. With young trees lifting and replanting is advisable.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Cucumbers.—Put out the latest plants at once on ridges or hillocks, and train them with a single stem to the trellis. Pinch out the lead when the plants have advanced up the trellis two-thirds of its height. If you have no Cucumber-house, cultivate some plants in pots or boxes, and train the growths near to the glass over the pathways in stoves, fruiting pierries, or other heated structures. Do not over-crop plants now bearing; and remove the fruits as soon as they are fit for table. Deformed fruits should not be allowed to develop. The night temperature should be about 70°, falling to 65° in the morning; by day it may be 75°, up to 80° with sun-heat, admitting a little air at the top of the house on all favourable occasions. Keep the evaporation-troughs filled with weak liquid-manure, and damp the floors early in the morning and at about P.M. Keep the glass clean. A few horse-droppings sprinkled on the beds occasionally will benefit the plants when they are afforded water, as they give off ammonia. Exercise care in affording water to the roots, but do not permit flagging.

Plines.—Arrange all young plants so that they may obtain the fullest amount of light and air. As the sun-heat diminishes the night temperature may be less also, until it reaches the winter standard of 55° to 60° at night, and 65° in the daytime. Ventilate freely when outside conditions are favourable, and exercise care in applying water. An inspection of the plants should be made about once a week, and when water is applied to a plant afford it copiously, and at about the same temperature as that of the bed. Confine the temperature at 70° as the minimum in the fruiting-houses, though on cold nights 2° less may be allowed, and in mild weather 5° more; 75° artificially by day, and 80° to 90° from sun-heat. Close the house at 80°, and sprinkle the paths as may be necessary.

Melons.—The Melon season as regards dung-heated pits and frames may now be considered at an end. Any fruits that are fully grown may be cut and placed in a warm house to ripen. The latest plants in houses will require a night temperature of about 70°, 75° by day by artificial means, advancing to 80° or 85° with sun-heat, admitting a little air when practicable. Sprinkle the paths every morning and early afternoon until the fruits are fully grown. Cut out all superfluous laterals, and thin the old foliage, that the sun's rays may freely enter the house. Prepare the required quantity of compost for next year's crop by securing rather strong loam taken off with its turf, stacking grass downwards, and adding about a bushel of quick-lime to every cart-load in stacking it. This will be in capital condition by spring.

THE FLOWER GARDEN.

By T. H. STONE, Gardener to Lord Pollinore, Pollinore Park, Exeter.

Bulbs and Tubers.—Crocus, Narcissus, Snowdrops, Winter Aconites, and Dog's-tooth Violets are the first that should be planted, and succeeding these early Tulips, Hyacinths, Scillas, Tritelins, Chionodoxas, &c. Select a time for the work when the weather is favourable, and the soil not very moist. The depth at which to plant varies from 3 to 6 inches, according to the species and the size of the

bulbs and nature of the soil, the shallower if it be heavy, remembering likewise that deep planting means late growth and flowering.

Planting in Grass.—In planting Narcissus, it should be remembered that massing them is better than scattering or thin planting, and the shape of the masses should be varied, so as to give the appearance of the bulbs having grown without the help of man. Raising ground is better than flat for such masses, and the areas round the boles of large deciduous trees are very suitable places if the shade be not dense. A point to be borne in mind is to extend the flowering season as much as possible. In planting bulbs, the bulbs should always rest on firm soil at the bottom of the hole; and when planting in turf, some prepared soil should be used around and over the bulbs.

Bulbs in Beds.—If masses of decided colours are wished for, the bulbs of Narcissus, Tulips, and Hyacinths, should be planted at about 6 inches apart in lines, and smaller species of bulbs may be placed at about 4 inches apart. If a display at one time is wished for, those varieties that are described as flowering simultaneously afford the best results. Planting Tulips over a groundwork of Myosotis gives pleasing effects; and as groundwork plants, Silene, where the land is suitable for it, *Linum catharticum*, *Arabis alpina*, &c., are very suitable plants. This style of planting is not so stiff and formal-looking as when bulbs alone are employed; blue beneath white, or yellow; pink and white, pink, yellow, and blue, according to taste, are all colours which blend satisfactorily. The plants used for covering the soil should flower at the same time as the bulbs. If spring-flowering plants, such as Wallflowers, Polyanthus, Myosotis, Arabis, and Alyssum are employed, almost the same combinations of colours may be obtained in masses or lighter arrangements.

Dahlia. The plants still in the open-air should be labelled correctly, errors being put right before the frost destroys the bloom; and when lifting the plants after frost has destroyed the tops, let the labels be securely tied on to the stems near the roots. Do not put the roots into store before the stems have become dry. There are many lovely colours among Dahlias, but there is room for much improvement in the habit of many of the varieties, the flowers being in many cases invisible by being hidden among the foliage.

General Remarks.—Tree leaves must be swept and raked up into heaps, and in the dressed parts of the ground wheeled away to the leaf-heap forthwith; but in woodland portions these heaps may remain till the leaves have all fallen. The edges of the turf may be clipped for the last time, and mowing discontinued generally. Mowing-machines should be cleaned and oiled before being put away for the winter. Lawns will still require sweeping and rolling when dry.

TRADE NOVELTIES.

ERNST BERNAY, Erfurt, offers Comet Aster Empress-Friedrick, flower-heads 4-5 ins. across, pure white; habit dwarf compact. The Lady Aster, light blue, pure white. Antirrhinum Queen Victoria, flowers large, brilliant white. *Chianthus punicens* albus; *Celosia spicata* argentea linearis, flower spikes bright rose at the tips, silvery from the centre downwards. The same firm announces novelties in Wallflowers, Poppies, *Silene pendula*, Phloxes, Petunias, &c., &c.

Mr. F. C. Heinemann, of Erfurt, announces a new variety of *Begonia scutelliflora* which he calls "Magnifica"; the foliage is small deep red, the flowers crimson. *Dianthus chinensis* violaceus, "Brilliant Wonder," has slightly-tinged brilliant flowers. *Begonia fimbriata* flore pleno; flowers 1-5 ins. diameter, white or pink. Cassier-Pansy, with violet petals undulated at the white edges. Erfurt Earliest Giant Runner bean produces its beans quite a week earlier than any of the other sorts.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

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

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Oct. 23.—Royal Horticultural Society's Bullies, &c., Protheroe & Morris, at the Drill Hall, Westminster.

SALES FOR THE WEEK.

DAILY.—Bullies, &c., Pollexfen & Co.
EVERY DAY EXCEPT SATURDAY.—Bullies, &c., Protheroe & Morris, at 11 A.M.
MONDAY, Oct. 22.—Bullies, Palmus, &c., Stevens' Rooms, 12.30.—Bullies, Strubs, &c., Johnson, Diamond & Son, noon.—Pears, Stock in Trade, Show House, East Show, Pollexfen & Co., Nursery Stock, West Wickham, Kent, Protheroe & Morris, 11.30 A.M.
TUESDAY, Oct. 23.—Bullies, &c., Pollexfen & Co.
WEDNESDAY, Oct. 24.—Palmus, &c., Stevens' Rooms, 12.30.—Lilies, Stevens' Rooms, 2.30.—Lilies, Protheroe & Morris, 3.30 and 4 P.M.
THURSDAY, Oct. 25.—Specimen Palmus, &c., Pollexfen & Co.—Nursery Stock, Showroom, Middlesex, Protheroe & Morris, 11.30 A.M.
FRIDAY, Nov. 1.—Orchids, Protheroe & Morris, 11.30.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—46.2.

ACTUAL TEMPERATURES:—

LONDON.—October 23 (6 P.M.): Max. 57; Min. 47, October 24.—(Full).
PROVINCES.—October 23 (6 P.M.): Max. 77, Seilly, Min. 49, N.E. Scotland.

Those interested in the record of the remarkable experiments on Peas made by Abbé MENDEL (see ante, p. 226), and translated in the *Journal of the Royal Horticultural Society*, should also refer to a paper contributed to the Scientific Committee by the late THOMAS LAXTON, and printed in the *Journal of the Society*, new series, vol. iv. (1872), p. 10. MENDEL it will be remembered, states that in hybrids some one character derived from either of the parents predominates, while the contrasting character remains latent. Thus the dominant characters present themselves in the progeny in the ratio of three to one of the recessive or latent character. Mr. LAXTON did not give many statistical data, so that we cannot fully compare his results with those of MENDEL; but on the surface there seem to be some discrepancies which might perhaps be smoothed out were accurate statistical analysis possible.

Mr. LAXTON showed seeds of various colours produced in the third generation from a cross made in 1866 between Ringleader Pea, an early, white-flowered, round-seeded variety, fertilised by the pollen of the Maple or Field Pea, which has taller stems than Ringleader, purple flower, and wrinkled seeds.

In the first generation, five white round seeds exactly like those of Ringleader were produced. This does not tally with the results obtained by MENDEL, who found that among four plants of this generation three presented the dominant character, and one the recessive. LAXTON'S seeds were sown in 1867, and all five produced tall purple-flowered plants, and the seeds were streaked or deeply violet coloured, some wrinkled, others round. These results again do not agree with those of MENDEL.

In 1868 the seeds of the previous year were sown. Some of the seedlings had light coloured stems, white flowers, and round white seeds. Others had coloured stems, purple flowers, and indented or round seeds, with coloured seed-coats.

In 1869 the seeds yielded in 1868 were sown, when the white seeds produced plants with white flowers and round white seeds. The coloured seeds produced plants of varied appearance, some yielded white flowers and round white seeds, but the majority produced purple flowers and variegated seeds. Some of the purple flowered plants of this generation produced white seeds, purple seeds, and black seeds. In no case was there an intermediate coloured flower. The whole produce of the third sowing yielded about one half white seeds, about three-eighths purplish, grey, and violet seeds, and about one-eighth "Maple" seeds. We must refer to the paper itself for the full details, but we may point out that Mr. LAXTON was of opinion that the two Peas, the white and the Maple, do not thoroughly intermingle, in this particular agreeing with MENDEL. Mr. LAXTON, like Mr. KNIGHT, found that the colours of the seed-coats in the first generation are never changed, although the cotyledons are occasionally changed as the result of cross fertilisation.

"It is also noticeable," says Mr. LAXTON, "that from a single cross between two different Peas many hundreds of varieties, not only like one or both parents and intermediate, but apparently differing from either. The italics are ours," may be produced in the course of three or four years (the shortest time which I have ascertained it takes to attain the climax of variation in the produce of cross fertilised Peas, and until which time it would seem useless to expect a fixed seedling variety to be produced), although a reversion to the characters of either parent, or of any one of the ancestors, may take place at an earlier period."

Mr. LAXTON was of opinion that the Field Pea (Maple Pea, Partridge Pea) was of a distinct species from the white-flowered culinary Pea; and one object of his experiments was to get light on the origin of the Field Pea. M. HENRY DE VILMORIN, at p. 171 of his *Plantes Potagères*, asserts that colour variation in the flowers is not sufficient to constitute a species in the absence of other points of distinction. ALPHONSE DE CANDOLLE pointed out in his *Origine des Plantes Cultivées*, p. 262, that the Grey Pea grows wild in Italy in mountainous districts widely removed from cultivated fields; but that no wild representative of the culinary Pea has yet been found. Round Peas have been found among the lake dwellings of Switzerland, so that the Pea was known to workers in the bronze age.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committee of the Royal Horticultural Society will be held on Tuesday, October 29, in the Drill Hall, Buckingham Gate, Westminster, I to 4 P.M. A lecture on "The Importance of Mechanical Forces as Displayed by Plants," will be given by the Rev. Prof. GEO. HESLOW, M.A., V.M.H., at 3 o'clock.

—At a general meeting of the Royal Horticultural Society, held on Tuesday, Oct. 15, thirty new Fellows were elected, making a total of 790 elected since the beginning of the present year. At the meeting on Nov. 26, instead of Professor HESLOW'S demonstration, a lecture will be given by Mr. J. E. AUSTIN on "Whole Fruit Preserving in Relation to Fruit Culture." Mr. AUSTIN will also exhibit a large number of specimens of bottled and otherwise preserved British fruits.

ROYAL HORTICULTURAL SOCIETY'S FIXTURES FOR 1902.—The following meetings for next year have been made provisionally. January 14, 28; February 11, 25; March 11, 25; April 8, 22; May 6, 20; June 10; July 8, 22; August 5, 19; September 2, 23; October 7, 21; November 1, 18; December 9. The Temple Show will be held on May 28, 29, and 30; the Rose Conference at Holland House, Kensington, on June 25 and 26; and the show of British fruits at the Crystal Palace on September 18, 19, and 20. Some of these dates are subject to alteration, as the date of the Coronation is not yet fixed.

"KEW BULLETIN."—The numbers for April-June, 1901, which have lately reached us, are unusually interesting. They contain articles by Mr. MASSEE on the Peach-curl (*Exoascus deformans*), so common on Peach-trees (see *Gardeners' Chronicle*, July 9, 1887, p. 53). All diseased branches should be cut away, and all diseased leaves burnt; in the following spring, the spraying with weak Bordeaux-mixture is recommended. The Sycamore leaf-blotch is also described and figured. It is caused by *Rhytisma acerinum*, a fungus propagated by spores formed on decaying and dead leaves, which should therefore be collected and burnt before the spores escape.

Under the heading "Gutta-percha from a Chinese Tree," mention is made of the singular plant first described by Prof. D. OLIVER under the name of *Eucommia ulmoides*. The affinities of the plant are still obscure, but now that it is in cultivation in the open air in Paris and at Kew, it may be hoped the uncertainty will be cleared away. Of even more interest is the fact that the plant is permeated with an elastic gum, which possibly may eventually be turned to account. The article in the *Bulletin* is valuable as condensing and focussing all that is yet known of this singular plant.

A very suggestive paper is that of Mr. MASSEE on the fungus now made use of to destroy locusts in S. Africa. The species has not previously been described, but a figure and description are here supplied, under the name of *Mucor exitiosus*. In the case of cockroaches, water containing the spores of the fungus was sprinkled over the insects, with the result that they soon died. Some of the enfeebled cockroaches were placed along with a dozen healthy, uninfected Orthoptera, who promptly ate up their weakly companions, but suffered the penalty of their cannibalism by themselves succumbing to the fungus.

A plant poisonous to oxen in the Transvaal has been determined by Prof. MACOWAN, of Cape Town, to be *Chaillietia cymosa* of HOOKER.

A statement of the principal subjects of research in the Jodrell Laboratory, established

in 1876, is added, together with an appreciative note on the labours of the late Professor CORNET, of the Jardin des Plantes, by the Director, SIR WILLIAM T. THISELTON-DYER.

CONCERNING PHYSALIS ALKEKENGII AND P. FRANCHETI.—At a meeting of the Prussian Horticultural Society on September 19 last, a discussion ensued concerning the above, in which several eminent horticulturists took part. Mr. KRETSCHMANN had found that when set in pots these plants never grew so vigorously as when planted in the open ground. There were certainly more fruits, but these were not so large or of such a fine colour. He had this year made the experiment of lifting the plants from the open ground, and potting them in early autumn. In fourteen days the plants, when kept close, began to make new roots, and seize upon the fresh soil. The leaves flagged a little at the first, but they soon recovered. For commercial purposes this plan was to be recommended, although the plants might lose a few of their leaves, the buyers setting most store on the fruits. Royal Garden Inspector PERRING stated that in Lichtenberg there were whole fields of *Physalis Alkekengi*. The plants were set out singly and potted shortly before they were sold. Mr. KLAR said that when the plants were severed at the ground-level with leaves and fruits entire, and dried in darkness, the leaves retain their green colour, and form a capital setting to the fruits. The plant needs a considerable quantity of manure.

PALMS.—Dr. EDU. DAMMER, of Gross Lichterfelde, III., near Berlin, who is engaged in drawing up a critical synopsis of the species of Palms now under cultivation in Europe, requests that owners of collections of these plants, whether in public or private gardens, will favour him with a list of their Palms. He would feel greatly obliged to them if, when possible, they would forward to him a leaf that he might settle the identity of any particular species. Dr. DAMMER much wishes to collect statements as to the size of the plants cultivated, and flowers, &c., and photographs also would be acceptable. He would be pleased also to name any species about which any doubt exists.

SMALL FRUITS.—The total acreage in the United Kingdom, including the Channel Isles and the Isle of Man, devoted to small fruit culture is 80,475 acres, out of a total of 77,677,959 acres, out of which 47,761,296 are under crops of various kinds.

WILLIAM WEST.—This gentleman, a Cambridge graduate, lately employed in the British Museum, proceeded to India as biologist to the Behar Indigo Planters' Association, but died from cholera a few weeks after landing.

THE HANBURY MEDAL.—The medal established as a memorial of the late DANIEL HANBURY by the Pharmaceutical Society has this year been awarded to Dr. GEORGE WATT, of Calcutta, the author of the standard book on the *Economic Products of India*.

ASTER AMELLUS.—Schoolboys, even those not so learned as the one known to MACMILLAN, will remember that VIRGIL, *Georgic*, iv., 270, speaks of a meadow flower called *Amellus*, "est etiam flos in pratis cui nomen Amello Fecere agricola."

It is supposed that the *Aster Amellus* of Italian and Central European pastures, was the plant intended by VIRGIL; but whilst his description of the mode of growth does not quite tally with our plant, his description of the flower as "aureus," and surrounded by a great number of purple leaves, like those

of a violet, may really apply to a Composite with ray-florets of purple and disc-florets of yellow, such as characterise the *Aster VIRGILII*. He did not speak the same botanical language as we do, and hence it is quite possible the *Aster Amellus* may really have been the plant he had in mind. BLACKMORE, lamented in the horticultural as in the literary world, took botanic license in his rendering in order to make the verisimilitude more complete, for he speaks in his translation of the *Georgics*, iv., l. 331, of—

"The disk of gold: the countless petal rays,
Of deepest violet, shot with purple haze."

Which is not quite what VIRGIL said—but let that pass. In any case, it is a most desirable plant for the front portions of the herbaceous border; but, as in other plants, there are varieties and varieties. Mr. AMOS PERRY, the Nurseries, Winchmore Hill, N., lately sent us a large bunch of a specially fine variety, which appeared to us to be superior even to the var. *besarabicus*. Is there a white variety?

EARL'S COURT EXHIBITION.—The Jury of the Military Exhibition, 1901, have again awarded Messrs. JOHN LAING & SONS, Forest Hill Nurseries, the Gold Medal and Diploma for their decorations of the extensive gardens.

ROYAL HOTHOUSE BUILDERS.—Messrs. MACKENZIE & MONCER, Limited, of Balcarras Street Works, Edinburgh, and 8, Camden Road, London, N.W., intimate that they have been appointed by Royal Warrant hothouse builders and heating engineers to His Majesty the KING. They held a similar appointment to the PRINCE OF WALES in 1892.

TESTIMONIAL TO MR. RICHARD DEAN, V.M.H.—It has been felt for some time by many of Mr. RICHARD DEAN'S friends that some public acknowledgment should be made of his long and valuable services to horticulture. A committee has been formed to promote this object, as this seems the opportune moment to do so when Mr. DEAN, now in his seventy-second year, is relinquishing, on account of advancing years, several of the honorary positions which he has filled with conspicuous ability, and in connection with which he has done so much gratuitous work. As an illustration of this work, we need only instance the enormous labour in connection with the Sweet Pea Bi-centenary Celebration of last year, which Mr. DEAN undertook without fee or reward, and which has only just been completed. Since 1857, when, on the death of Mr. JOHN EDWARDS, Mr. DEAN accepted the position of Honorary Secretary of the National Floricultural Society, he has been a leading worker in nearly every horticultural movement. In 1866, his services as assistant to the Secretaries for the Great International Exhibition, when a very large share of the work fell to him, were much appreciated. It is also worth recalling that he was Honorary Secretary of the two Hailstorm Relief Funds of 1876 and 1879, which were instrumental in doing a world of good to many small growers who suffered by the storms. He was also Honorary Secretary of the Postal Reform Committee, of which the late Mr. ALFRED SITTON was Chairman. This Committee did much to hasten the adoption, first of the Sample Post, and latterly of the Parcel Post, which is now so great a boon to all nurserymen and seedsmen. As one of the original founders of the Royal Gardeners' Orphan Fund and a member of its Committee from the first until the close of last year, he has shown a warm interest in all charitable organisations connected with the profession. As a popular writer on matters pertaining to

the garden, as an acknowledged authority on florists' flowers, and a judge at horticultural exhibitions, Mr. DEAN has a wide reputation. We hope a very large number of those who are interested in horticulture, many of whom know Mr. DEAN'S worth as well as we do, will favour us with a hearty and generous response to this letter. A meeting of subscribers will be held in London, to decide what form the presentation shall take, and when and how it will be presented. Notice of this meeting will be sent to every subscriber. N. SHERWOOD (HERST & SOX, 152, Ilomsditch, London), Hon. Treasurer and Chairman of Acting Committee; WILLIAM CUTHBERTSON (DOBIE & CO., Rothessay), and H. J. JONES (Ryecroft, Lewisham, Kent), Hon. Secretaries.

PERPETUAL-FLOWERING PINKS.—Mr. LADHAM, of the Shipley Nurseries, Southampton, has sent us (October 22) a bunch of fragrant Pinks, from plants growing out-of-doors without protection. The varieties are Mrs. Moulton, Lizzie Duval, Florence, and Marion. All of them have fully expanded blossoms, and any number of buds yet to expand, thus fully bearing out the perpetual-flowering characteristic attributed to them.

ROYAL GARDENERS' ORPHAN FUND.—At a meeting of the Committee held on the 16th inst., it was resolved to hold the Annual Meeting in the Essex Hall, Essex Street, Strand, W.C., on Friday, February 11th, when an election of candidates for the benefits of the Fund will take place, nominations for which must be delivered to the Secretary not later than December 16th next. It was also arranged to hold the annual Festival in aid of the Fund in the Victoria Hall, Hotel Cecil, on Thursday, May 8th, when LEONARD DE ROTHSCHILD, Esq., has kindly consented to preside. Forms for the nomination of candidates can be obtained from the Secretary at his new address, 30, Wellington Street, Covent Garden, W.C.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Sixty-third Anniversary Festival Dinner of this Institution will be held on May 28, at the Hôtel Métropole, under the Presidency of his Grace the Duke of MANTONETON.

ANOTHER ROYAL TRADESMAN.—Messrs. DICKSON, BROWN, & TAIT, Manchester, who for many years have held an appointment as Royal purveyors, have been appointed seedsmen to H.M. the KING.

PUBLICATIONS RECEIVED.—*Thirty-eighth Annual Report of the Queensland Acclimatisation Society*, for the year ending March 31, 1901. "As usual, the past year has been one full of active work. While the growth of weeds has been greatly diminished, all other gardening operations were rendered by the drought heavier and less satisfactory than usual." *Agricultural Journal of the Cape of Good Hope*, August 29, 1901. Besides many agricultural notes, this includes: A Review of the Fruit-growing Industry in Cape Colony, by C. Mayer; Cape Fruit Trade, Winter Irrigation of Deciduous Orchards, Herb Culture, &c. *The Tropical Agriculturist*, September, 1901. This contains articles on Fibres and Rubbers, the Fig, Influence of Forests on Climatic Conditions, and many other notes and gleanings. In connection with the Paris Exposition Universelle, *Internationale des Expositions*, we have received *Process-Verbaux-Sommaires* (M. Alfred Noubout) of the *Congrès International d'Arboriculture et de Pomologie*; and the *Mémoires présentés au dit Congrès*; an interesting publication, illustrated with portraits of well-known arboriculturists.—*The Robbinston Experiments*, Plans and Summary Tables, arranged for Reference in the Fields, 1901.—*Memoranda of the British Flora*, and *Results of the Field and other Experiments conducted on the Farms and in the Laboratory of the late Sir John Bennet Lawes, Bart., at Robbinston, Herts.* Being a Report to the Lawes' Agricultural Trust Committee, by Sir J. Henry Gilbert, F.R.S. Fifty-eighth year of the experiments, 1901. *Bulletin of Miscellaneous Information, Trinidad*, May, 1901. Contents: Insect Attack on Carao-trees in Grenada; Report by H. Maxwell-Letroy, Esq.

WORMS OF THE GARDEN AND LAWN.

I.—INTRODUCTORY.

DARWIN'S researches have shown us that the earthworm is a wonderful worker. It can transform the face of Nature. Silently, patiently, persistently it toils on in secret, without show or display, yet in the course of a twelvemonth the amount of mould that has passed through its body is almost incredible. The weak point in Darwin's work lay in the fact that he knew little or nothing of the worms themselves. He did not know how many species of earthworm were to be found in Great Britain. When he wrote on *Vegetable Mould*, he assumed the existence of eight or ten species. When I took up the study some years ago I found scattered and uncertain records showing that at least a dozen species had been recorded. By diligent working I was able in six years to double the number, and it is now known that at least twenty-five species of earthworm are to be found in the British Isles. If our Scotch mountains and the islands on our coasts were carefully explored, we should probably add two or three more. Two of the species at least are found at present only in Ireland, and one of these is as yet known in no other part of the world.

Though we have twenty-five known species of native earthworms, several of these are not usually to be met with either in gardens or lawns, they must be sought in woods, pastures, and waste places, or by the side of ponds, streams, and ditches. They will, however, be referred to in their proper places, in order that the student may have a correct idea of their form and appearance, and may know how to identify them when they are met with.

As these papers are intended to be popular, and as free as possible from scientific or technical terms, such descriptions only will be given as relate to external appearances. Every British worm can be identified without dissection, by outward characters alone; but it is well to preserve an adult specimen of each species in spirits after they have been correctly identified, for future reference. The writer is prepared to supply preserved specimens, correctly named, for a small sum.

Fortunately, the difficulties in the way of our study are few. There are only ten or a dozen worms constantly met with in gardens and lawns, and by observing their colour, size, length, girdle, and head, they can usually be distinguished with ease. Let us note the main points, and so prepare the way for a scientific classification.

Earthworms are animals whose boneless bodies are composed of a number of rings. The Latin word for a ring is *annulus*, and worms are called Annulids, or ringed creatures. These rings, or segments, closely resemble each other, and usually carry eight bristles, hairs, or setae. A few of the rings, however, have undergone modification, and it is chiefly by means of these modifications that we are able to distinguish species and genera. Although in a few cases the head and tail are very similar in appearance, as a rule they differ sufficiently to enable us readily to distinguish the one from the other. If the head is examined, it will be found that the first ring differs from all the rest, inasmuch as it is mortised, or dovetailed, into the ring next to it.

Everyone has observed that worms are often swollen in one part of the body. It used to be thought that this was a proof that the creature had been cut asunder by the spine of the gardener and had grown together again. It is needless to say that this is not the case. If

the hinder part of a worm be cut off it dies. Frequently, however, the fore-part produces a new tail. The swollen portion or girdle is an indication that the worm is adult, and it is from the girdle that the egg-case or cocoon is produced.

Besides the marks which I have indicated there are others of great importance. With one exception we find on the fifteenth ring some openings, frequently seated on swollen tissue. These pores are of importance in connection with certain processes of reproduction. As they always occur on the fifteenth segment, however, they are only useful for purposes of identification in a modified degree. First they serve to distinguish a small, semi-aquatic worm (*Allurus*) from the true earthworms, and in the second place it is sometimes helpful to learn whether or not the pores are carried on pads of swollen tissue, or are simple openings in the segment.

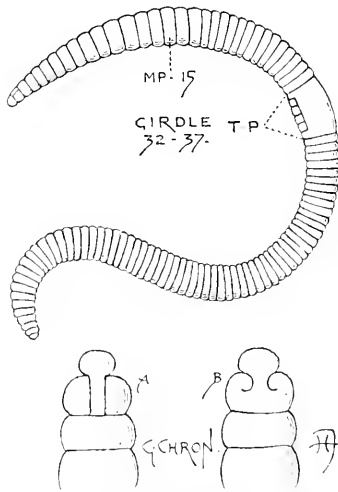


FIG. 66. EARTHWORM.

A, Head of *Lumbricus*.
B, Head of *Allolobophora*.

In the larger worms, and especially in those species which, like the Brandling, secrete a coloured liquid, it is possible to find a row of pores or round openings the size of a pin-prick down the back. These openings begin between different rings in each of the different species, just as the girdles differ in position, and by ascertaining where the dorsal (or back) pores commence, we have an additional key to species. The colour again is a pretty constant character, while the eight bristles on the lower side of each ring help us in our study. Sometimes they are strictly paired, at other times, that is, in other species, they are more or less widely separated, or irregularly arranged.

We thus have size, colour, shape, position of organs, such as girdle and pores, arrangement of bristles, and other clues to aid us in our researches. Now, all our British earthworms, with one exception, belong to two genera. They are called *Lumbricus* and *Allolobophora*, and these two genera are in almost every case so clearly marked off from each other that they can readily be distinguished. The adults in both genera have girdles towards the middle of the body, and we have in each case to count the rings from the head, or from the male pores on the fifteenth ring to find

out on which ring the girdle commences. In many cases that character is sufficient in itself. If I know where the girdle begins and how far it extends, I can almost always tell what worm I have to identify. But though both genera have girdles, it may be laid down as a general rule that in the girdle of *Lumbricus* there are always six segments, while in *Allolobophora* the number of segments or rings in the girdle varies.

The head differs in the two, and the diagram will make the difference clear (see fig. 96).

In *Lumbricus* the head forms a kind of mortise, in *Allolobophora* it is dovetailed into the ring behind it. We fortunately have among our British earthworms a species which bridges over the gulf between these two species. It has the mortised head of the first genus, and in other points it resembles the second. In *Lumbricus* the bristles are always in pairs, not so it is in every case with *Allolobophora*. Again, *Lumbricus* is always of a ruddy brown colour, with iridescent hues, and a flattened tail. The genus *Allolobophora* varies in colour, shape, and size greatly, and in many instances the tails are round. The flattened tail greatly aids the worms which burrow, as it enables them to grip their retreats more securely.

While the *Lumbricus* is slimy, it is a frequent thing for species of the other genus to emit a coloured, or even fetid, liquid from the openings down the back. It may be well, perhaps, to present a tabulated summary of these facts for ready reference. There are exceptions to every rule, but these must be dealt with as they occur. We have, then, the following general facts to guide us:—

LUMBRICUS.	ALLOLOBOPHORA.
Head mortised.	Head dovetailed.
Bristles always in pairs.	Bristles often not in pairs.
Girdle composed of six rings.	Girdle rings varying in number.
Colour ruddy-brown, iridescent.	Colour varied, seldom iridescent.
Exudes slime, but no fluid.	Often exudes fluid.
Tail flattened.	Tail usually round.

We recommend the student to examine a series of worms, and note the foregoing points. They should be entered in a book with details as to colour, size, shape of tail, slimy or liquid exudations, presence or absence of girdle, and other points of interest. We should recommend that no attention be paid, for the present, to species which have no girdle. If worms which do not answer the description given above are found in hot-houses or among foreign plants, it may be assumed that they are not natives, and it would be well to submit them to the writer for examination.

When the student has examined a number of worms, he will find it fairly easy to distinguish the two genera; and as he will observe that the species differ a good deal in various ways, he will be prepared for identifying them as our descriptions of the species appear from time to time. [Article II. will deal with the Earthworm.] *Hilddic Friend, Chichester.*

(To be continued.)

THE CUCKOO AND OTHER BIRDS.

ON August 9 I noted a bird on my bowling-green, which on closer observation proved to be a young, yet fully fledged cuckoo, earnestly engaged in food-seeking, and it was evidently finding much to its liking. Its mode of progression was ungainly and peculiar, and to me most interesting, having never before seen one on the grass, lawn, or meadow, all others having been flying, or perched. On the ground it therefore appeared so different, that at first I scarcely recognised its individuality.

ality, the long wings, tail, and crouching form, coupled with its peculiar, strange hopping motion, as it darted about flies and disturbed moths, giving it more the appearance of a kestrel. The place of resort was also unusual, it mostly living on caterpillars, tree or bush larvae, being particularly fond of those that are "hairy," amongst others that of the Goose-berry-moth. At times it flew into the fruit-trees, but soon returned to the well-shaven bowling-green. It stayed about the whole day, and the three following, then disappeared entirely, and perhaps ere now is at its ease in a far-off and more genial climate. Why it should resort to such a place, and for so long a time, in close proximity to my house, can only be accounted for by the fact that through the

hedge-sparrow, and robin, and yet none of these made havoc with the smooth green caterpillar on my Currant and Goose-berry-bushes, which I left purposely unmolested that I might note which birds were chiefly my garden friends; but though pressed by hunger as some must have been by the dearth of insect life by reason of the dry weather, not a caterpillar was eaten, and in a few days every leaf had disappeared from three of the bushes. I mention this to show that the usual assertion that when there are birds the insect life will be reduced to a minimum, is a fallacy. The fact is, that certain birds prey only on those insects which are suitable for their food, and no other. They have a keen discrimination in this respect, and are not

well distributed, the frosts milder than usual, with the result that many of the species of tender plants passed through the cold weather without serious injury. Octo-annum Gardens were satisfactorily kept; Chrysanthemums were exceptionally good, many of the individual blooms being over 9 inches across. Plants of *Streptocarpus Dunii* (peculiar as producing a large solitary leaf) were raised from seed. Sim's Park, Coomoor, and Experimental Garden, Barliyar, are reported as being in a satisfactory condition.

"AGRICULTURAL BULLETIN OF THE STRAITS AND FEDERATED MALAYA STATES."

The present *Agri-horticultural Bulletin*, published by the Gardens Department, proving



FIG. 37. SCENE IN THE UPPER PORTION OF BOTANICAL GARDEN, ADELAIDE. (SEE P. 301.)

extreme dryness of the season the woodland insects have become rare, and for such the small mollusca and beetles were largely substituted. It is no uncommon thing for the cuckoo to visit fruit gardens, especially Goose-berry plantations, in search of food; therefore I was in no way surprised to see the one under notice at early morning in a Currant-bush, knowing that it was infested with a small green caterpillar, and felt gratified for the service that I supposed it was doing by clearing of these insect pests. Yet though it sat for some short time in the bush, I found on examination that, to all appearance, none of the caterpillars had been eaten, and were in no way disturbed. Here I may remark that my garden is the resort of many birds, among them the black-bird, song-thrush, missel-thrush, blue-tit, marsh-tit, goldfinch, green linnet, chaffinch,

the universal destroyers of insects as is so frequently and ignorantly stated. The foregoing is not by any means the only experiment and test that I have made, but it is another and I think conclusive proof that the too generally received opinion that all bird and insect life are completely antagonistic is not so, and that the one may starve in the midst of any number of the other. *Harrison Weir, Appleton, Kent.*

INDIA.

REPORT OF GOVERNMENT BOTANIC GARDENS, MADRAS.

Report of the Madras Government Botanic Gardens and Parks, the Nilgiris, for 1900-1901, is before us. Rainfall was, in Nilgiris, fairly

insufficient, it is arranged to issue a monthly *Bulletin*, devoted wholly to Agriculture. The lines upon which it is conducted are identical to a large extent to those of similar publications in Australia, Jamaica, and other centres. The contents will include: 1. Leading articles by the Editor and others. 2. Articles on Forestry, Labour Supply, Soils, &c. 3. Extracts. 4. Entomological Notes, Insect and Fungus Pests, &c. 5. Reports of Meetings and Shows. 6. Notes and Queries. 7. Correspondence. 8. Market and Trade Reports. 9. Weather Reports. In fact, the pages will be open to all subjects of interest to the planter, for whom in the main they are intended. It is proposed that the Gardens Department shall edit the *Bulletin*, and that a band of contributors from various centres be appointed. The first number of the new publication bears date October 1.

HOME CORRESPONDENCE.

PEACH GOLDEN EAGLE.—Planters would do well to purchase this variety if they do not already possess it. The flavour of the fruit is rich and piquant for so late in the season. Some of them measure 9 inches round. Our tree is against an east wall, and the fruit was ripe about the 9th inst. The tree is a good grower, and with us crops each season. It is much later than Princess of Wales on the same wall. *J. Mayne, Bilton Gardens, Devonshire.* [A fruit which accompanied the above note bears out what our correspondent says of the variety. It was raised by Mr. Rivers, and is described by Hogg as superior to any of the yellow Peaches he had met with. Ed.]

ARISTOLOCHIA GIGAS VAR.—I herewith send you a photograph taken here of the Pelican flower, *Aristolochia gigas* var. *Sturtevantii*, which measured from the top of the flower-stalk to the tip of the tail exactly 6 feet in length and 17 inches in width at its widest part. A similar plant has also this year produced four fully developed flowers at one time with a number of other buds in various stages of development, although, of course, none of these were as large as the flower referred to above. *J. Guttridge, Botanic Gardens, Liverpool.* [A good photograph of an extraordinary flower, having previously given a large illustration of the plant, it is not necessary to reproduce the photograph kindly sent us by Mr. Guttridge. Ed.]

GIGANTIC MUSHROOMS.—In reference to the two letters respecting gigantic Mushrooms, I have a record of a still larger example, whose circumference was 1 ft., and weight 3 lbs. A drawing in the Department of Botany, British Museum, represents a specimen 3 ft. in circumference. Mr. F. Williams is wrong in referring these plants to *Agaricus arvensis*; the name is *A. viliatensis*. This is an uncommon species of Mushroom, and if your correspondents would tell the readers of the *Gardeners' Chronicle* something about the habitat, colour, rarity, odour, colour of the flesh when broken, colour of the gills, and taste, as observed by them, it would be useful. *W. G. S.*

TULIP BRUNHILDE.—Referring to Mr. R. Dean's note, re "Tulip Brunhilde," in the *Gardeners' Chronicle* of 19th inst., p. 291, we beg to send you our English catalogues issued since the year 1878 (twenty-three years ago); we have marked in each copy the page where the Tulip, now known as Brunhilde (or l'Unique) is offered. We have already stated before in your paper, that we catalogued the Tulip in question for nearly a quarter of a century (Sept. 21, p. 224), so we cannot be expected to again protest against Mr. Dean's assertion "that it would seem as if the variety came to [our] knowledge for the first time in 1901;" but we shall esteem it a favour if you will kindly publish a correction of Mr. Dean's note, based upon the catalogues sent. *E. H. Kretzschmar & Son, Haarlem.*

SPREADING SILLY RUMOURS.—Your editorial note (p. 292) is, I think, very well timed. As recently as the 15th inst. I was discussing the subject with a well-known gardener in this county. The man in question had recently experienced some inconvenience from a similar report. In his case there was no real foundation for it. This is an age of personal inquisitiveness into other people's affairs, seeing that so many periodicals are published, and largely sold, mainly filled by analytical details of persons famous—or infamous—in some station of life, and I would fain hope that my brother horticulturists will not extend this vulgar curiosity into our fraternity. I fear the source of these unfounded reports amongst gardeners is from those whose business takes them from garden to garden in search of orders. Those who are trying to sell books are, in my experience, the worst offenders. The intention to do harm is not always present in their minds; though

I fear the fact as to whether they get an order or not has much to do with their remarks. It is only fair to say that amongst the class I allude to there are many discreet, sensible men. Whenever I come across a man who throws out innuendos that Mr. A. or B. is not likely to be there long, &c., I generally manage to quietly lead him to the exit of the garden and wish him good-day. Such persons do no good to any one in the long run. *Yorkshire Gardener.*

USEFUL ROSES.—I read with interest Mr. Slade's list of useful Roses, but I am surprised that he omitted General Jacqueminot, Prince Camille de Rohan, Jules Margottin, and Ulrich Brunner, all very useful Roses; especially the last named, for its colour, fragrance, and good constitution, and because it is a good pot Rose. Madame G. Luzeit is another fine variety, an H.P. of a pink colour. Has not Mr. Slade made a mistake in describing Madame Lambert as a pale yellow Rose? It is very changeable in colour, but that which I know under the name varies from a salmon-pink in the spring to almost a red in autumn. Mr. Slade said nothing about white flowered Roses, and yet there are some beautiful varieties, for example Niphetos, and Souvenir de S.A. Prince. "Pierre Notting, vig., blackish-red, shaded with violet, good shape," is a catalogue description and a correct one, but how many decent blooms would one see in a private garden under ordinary cultivation. The list of Roses suitable for garden decoration is the most useful part of the article, especially to young gardeners who cannot visit the nurseries. *A. L. G.* [Mr. Slade named only a few varieties, not a complete list, knowing that a calendarial article is scarcely a suitable place for a lengthy list. Ed.]

NOTES ON TOMATOS.—Tomatos have been very productive out-of-doors this year, so that I should like to make a few remarks on the new varieties that I have grown, viz., Veitch's Glory and Holmes. The first is a vigorous plant, sets its bloom freely, and brings to good development seven good bunches of fruits which are smooth, and of a very bright red, and weighing in some instances over half-a-pound, amounting therefore to 20 lb. of fruit to a plant. It is one of the best for growing out-of-doors. Holmes is a very heavy cropper also; the fruit not quite so large, smooth, and of a good colour—a useful market variety. Another excellent variety is Winter Beauty, good for cultivation under glass, setting freely and fruiting early; but it is also useful out-of-doors. This is the best indoor Tomato for early fruiting of which I have any experience. The plants were set out the third week in May, and grown with one stem, all side-growths being removed and some of the large leaves reduced one half in size. The plants received but a small quantity of water at the root, and were not affected by any diseases. Too much water and over feeding are, I think, the cause of black-spot and other maladies. Except in a droughty season, like the past summer, I seldom apply water, and then only sparingly. *F. L. C.*

ORCHID PROPAGATION.—Very interesting are the observations of Mr. James O'Brien concerning Orchid propagation. I quite agree with him as to the propriety of removing the back bulbs, and have been doing this for some time; but I have scarcely the courage of my conviction. The portion removed is hung near the glass in a shady, moist position, and given a fair trial; should any roots or "breaks" appear, the plant is put on the top of a pot filled with nothing but broken crocks and charcoal. I never leave the roots to lengthen; no sooner do the roots begin to show themselves than they are placed on a pot. This method of potting in crocks and charcoal has been so successful here, that on potting sickly plants only the foregoing substances are used; and, indeed, I venture to believe that in the case of many Cattleyas, this "soil" is much more acceptable and certainly much more manageable than the orthodox "sphagnum,

peat, charcoal, and crocks." The plants are better in colour, more sturdy, and are ripened better; and in the growing season, too, the air of the house has a much greater chance to circulate between the crocks than when the pots are filled with sphagnum and peat. The last experiment in this way was with Cattleya Percivaliana in bad health; it was pulled into two pieces, one was placed on crocks and charcoal, the other on an ordinary composition; the former has sent down two dozen roots, the latter scarcely two. *H. W., Trevice.*

BULB GARDEN.

FORCING NARCISSUS.

If the gardener needs large quantities of sweet-scented flowers at about the New Year, few plants are better for the purpose than Narcissus Paper-white, Gloriosa, Grand Monarch, &c., four or five bulbs of each being planted forthwith close together in 4 or 8-inch pots, according to the variety and size of the bulbs. The soil should consist of fresh loam mixed with about a 1 rotten manure and some road grit. When potted, place them in a cool spot, and cover with coal-ash or some other material to keep the bulbs dark and firm in the soil till 3 inches of growth is observed; then remove them to the greenhouse or pit to grow somewhat slowly. These early varieties should be forced in batches at tri-weekly intervals, according to the demand, and afforded plenty of moisture at the roots after growth has become active, and occasionally weak liquid-manure. The large-flowered N. Gloriosa, and N. Grand Monarch, do not respond to early forcing as the smaller-flowered Tazettas, but when more gradually forced than those they make a grand show, and last for a long period if well supplied with water; the flowers also keep for a long time when removed from the plants. *H. Markham.*

NEPENTHES VENTRICOSA.

This handsome species was exhibited for the first time at the meeting of the Royal Horticultural Society on the 15th inst. It was overlooked that the plant in question had been figured in our columns on June 18, 1898, when a description of it, taken from specimens at Kew, was given by Mr. Rolfe. The pitcher shown by Messrs. Veitch was smooth, cream coloured, with a purplish rim (see fig. 388).

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 15.—*President:* Dr. M. C. Cooke, in the chair. Messrs. Houston, Bennett, Drury, Saunders, Holmes and Worsley; Drs. Muller and Masters, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Haemorrhoids, dead.—Mr. SAUNDERS reported as follows upon the specimens sent to the last meeting, exhibited by Mr. Wilks:—"The bark of the shoots in places was splitting, and had all the appearance of being attacked by canker; but there were no signs of any fungus on examination with a strong pocket lens; under the bark were several small orange-coloured dipterous grubs, belonging to the family Cecidomyiidae. They exactly resembled grubs which I have found feeding on the 'Rose-rust,' *Phragmidium subcortecium*, and the 'Bean-rust,' *Uromyces fabae*, and I cannot help thinking that they must have led on some fungoid matter. Their mouths are not suited for feeding on any hard substance, such as the Hawthorn shoot, which was practically dead, and what may have caused the death of the shoots I cannot say, but I should suggest that it was of fungoid origin."



FIG. 98.—*NEPENTHES VENTRICOSA*—A PHILIPPINE SPECIES.

Awarded First-class Certificate at the last Meeting of the Royal Horticultural Society (See p. 542)

Cucurbitis disease.—Mr. HORSFORD described a disease which is doing much injury in parts of England, one grower alone having lost £1,000 worth of fruit. It appears on the plants twelve weeks after sowing the seed. The fungus is *Ceroospora melonis*, M.C.C., described by Dr. Cooke in the *Gardener's Chronicle* for September 5, 1886, p. 271. It begins with a few spots on the leaves, spreading till there is no healthy leaf left. As the spores are multiseptate, and each joint can propagate the fungus, the disease is easily communicated to other plants. There is no remedy except complete destruction. Cucumbers or Melons should not be grown in the same pits in which diseased plants have been for some seasons.

Phlegma on Ivy-stemming root.—Mr. HORSFORD also showed a leaf of the Ivy-leaved species, of which the petiole had formed a callus with numerous roots. The effect upon the blade was to enlarge the cells. Mr. Henslow observed that he had read of, but could not recall the reference to, a very similar result occurring with a leaf of Ivy, which however became much enlarged.

Plant on a tree's trunk.—Mr. HELME exhibited a specimen having all the leaflets well developed from the first. At a subsequent stage, only phyllodes are borne by the tree.

Galls on Birch leaves.—He also showed specimens remarkable for their hairiness, while the leaf of the Birch is perfectly hairless. Mr. HORSFORD observed that this was a common result in galls on many plants. He had observed it on the smooth-leaved *Erica* sea-pink, which bore hairy galls. Woolly, terminal buds are common on *Veronica chamaedrys*, the excess of hair being due to an insect. Mr. MEN, who had studied the subject, came to the conclusion that such hairs, as well as those especially on ribs and veins in a normal state, are due to a localised extra-nourishment and a compensatory distribution of sap (*Veronica* or *Plant. Structure* p. 205).

Four species of Figlets.—Dr. MASTERS showed a specimen, from Mr. South, Newry, in which the stem bore four tree-terminal inflorescences, but it was not clear whether they were due to cohesion or fasciation.

Root-swell.—He also exhibited some globular galls due to the attacks of a *Cynops* (*Bot. Mag.*).

Tunnel-shaped structure.—He also showed from Dr. From a leaf of some species of *Ficus* growing in the Botanic Garden of Calcutta, in which the basal part formed a hollow cone or tunnel-shaped structure. It was exceptional in that it was borne on the under side, and not the upper. Every leaf of the tree was said to be so affected.

Stipitate stem.—Mr. BRYARD sent a specimen of this fungus, which he described as having almost a peacock blue colour when fresh. It was found at Boxley, Kent. It furnishes the green slabs in four-ridge ware.

Air-Plant.—Dr. FLOWBRIDGE sent a portion of a species of *Tillandsia*, called the Cape Air-Plant, but a native of Tropical America. He writes as follows on August 12, this specimen of *Tillandsia*, the so-called Air-Plant of Cape Colony, was received from Cape Town. It was attached a piece of string by which it had been suspended in the cabin of the gentleman who brought it over. It was hung up inside a south window in my house in King's Lynn, and in due course flowered. There was no trace of flower bud when it arrived, but about a fortnight back a dark blue corolla appeared, prying from what appeared to be a pink calyx. These xerophilous plants are always interesting, and as a companion to the above a stem of *Sedum spectiosum* was suspended in the same window on the same date. The changes were carefully watched, and consisted first in the turning upward of the flower bud, followed by the turning of the leaves on the stem, so that they pointed upward. The lowermost leaves, i.e., those nearest the root, began to wither, while those nearest the flower remained quite fresh. At this time the base of the stem threw out numerous roots. The flower was fully expanded by October 1, and most of the leaves, as well as the roots, was shrivelled.

British dye plant.—A communication was also received from Dr. FLOWBRIDGE on this subject, with numerous specimens of wool dyed from various wild British plants. The former will appear in the *Journal* of the Society.

Yucca Douglasii seedling.—Mr. ELWES sent specimens of young trees of this species, and also of *Larix lepidota* about 2 feet high, in a drying slate. He observes: "They show a disease which I cannot account for, but which is very prevalent in my nursery. The Larches are believed to be raised from Japanese seed. The

ceived plants of the same species from Tortworth Court, Chiswick, near Epsom, Hildenley, Yorks; and Dun-
dell, Perth, all of which are perfectly healthy in the
same soil, situation, and season." The opinion of Mr.
Worsley and others was that the death of the plants
was due to inferior vigour in the Japanese seeds, and
that of Dr. M. C. Cooke was that no fungus was present
to account for it.

Very diseased.—Mr. R. W. DEAN, of Wainford, Lynton,
Yewington, sent bouquets of Yew attacked by *Sphaeria*
taxi. It is a fungus which does but little harm to the
trees, as it does not affect the branch, only the green
leaves. Lime is probably deficient in the soil.

EARLY CHRYSANTHEMUMS IN PARIS.

OCTOBER 19.—The fortnightly show of the National
Horticultural Society that was held on the above date
was devoted to a display of early flowering Chrysan-
themums. The hall of the Society, in which the show
was held, is of large dimensions, and was well lighted,
and it was gallily arranged with the exhibits, which, if
not numerous, were in most cases attractive.

Several classes for cut blooms and pot-plants were
provided, but as the names of exhibitors were not put
up when we left the show, it will perhaps be more
useful just to mention the varieties that were most
freely shown. In bush plants in pots, many of which
were freely shown, were Louis Lemaire, yellow-
bronze; Petit Paul, pale pink; le neprésault, white;
Mathilde de Massange, pale pink with a yellow centre;
Parisiana, a very good Japanese, of good size, very full,
and pure white; Madame Elise Poirrette, very free,
and bright rose pink. These were arranged in a large rec-
tangular lot on one side of the hall, being varied by
an extensive display of Michaelmas Daisies, and some
large specimen blooms, of which George Boutin, yellow;
Madame Therese Mazier, large pure white; the well-
known pink Raymond, Princesse Alice de Monaco,
and several very large pure white, and Madame Gustave
Henry, were all conspicuous. We noticed, too, such
well-known sorts in good form as M. Fatale, Soleil
d'Octobre, Le Grand Dragon, Mrs. C. Harlan Payne,
and Madame Ed. Rey. Here and there a few others less
well known perhaps to English growers, such as Vulcan,
dull carmine and buff; Transvaal, a reflexed Japanese,
pure golden yellow; Louise Brossillon, pure white, with
great length of florets. All of the Japanese section were
represented. One interesting, called M. Raymond De-
forest, a finely shaped bloom, very close in bud, and
of good depth, the colour golden-amber, was much
admired; but in many instances there were too many
blooms lacking in depth, and some were only partly
developed.

In another bed of similar proportions, we noticed
several well-known Pompons, M. Caboché, Grand Pêlé,
and Yellow Comet; others were the popular M. Gus-
tavewald, Flamure, pale purple-crimson; Gloire
d'Astafort, deep orange-crimson, a Japanese of medium
size. In this collection there were also a number
of large specimen blooms, the best being Lucia, pure
pale yellow; President Kruger, yellow and dull buff;
Megeux, rose-amarant; Marquis Visconti Venosta,
sharp pointed florets, colour rose-amarant; Better
known varieties were M. Hooper Pearson, H. ser. Reine
d'Angleterre, Mrs. J. Lewis, M. Cheron de Leche, and
Major Matthew.

Outside the entrance in the courtyard was a prettily
arranged group of a variety called Schah de Perse,
deep golden-yellow; and Léon Bonneau, a medium-sized
Japanese, orange-crimson. Another group
similarly placed was very varied and effective, and
contained among many others Alfred Broz, Soleil
d'Octobre, Jules Mourg, M. Gustave Grunewald, Madame
Caroline, Madame Desgranges, Madame Liger Eguenot,
&c. C. H. P.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 15.—First-class Certificates were given to —
Cattleya aurea Souvenir de Queen Victoria, a beautiful
form with nearly white sepals and petals, and large
lip; rather paler than the type in its markings. A.
WARRINGTON, Esq.

Cattleya × *Maudslayi* var. *magnifica*. G. W. LAW-
SON, Esq., Esq.

Cattleya × *Maudslayi* var. *magnifica*. Mr. A. EDGE.
An Award of Merit was made to *Laelo-Cattleya* (hy-
brid L. purpurata × *Cattleya Dowiana aurea*, Lecanaria
var.) J. LEHMANN, Esq.

W. DICKWORTH, Esq. (Mr. Tindal), exhibited the
beautiful albino form of *Laela Peruvia*, which has been
previously certificated at Manchester.

W. W. WIDLEY, Esq. (Mr. Rogers), sent a beautiful
variety of *Cypripedium* × *Phippsiana*, and *Cattleya*
Maudslayi var. *oblonga*.

W. E. WATSON, Esq. exhibited a well grown plant of
Cattleya. JOHN BURGESS.

Mr. W. HOLMES exhibited *Cypripedium in-signis* var.
Laura Kimball, Broomfield var. P. H.

CROYDON HORTICULTURAL MU- TUAL IMPROVEMENT.

OCTOBER 15.—At a meeting on the above date, Mr. E.
Kroner, of the Romani Nursery, Bandon Hill, Croy-
don, gave a lecture on "An Orchid-cultivator's Travels
through British Guiana to Brazil." Mr. Kroner de-
scribed his travels in search of the charming *Cattleya*
Lawrenceana and other rare Orchids, detailing the
various species found, and their natural conditions and
habits of growth. The journey through the swamps,
and the ascent of the mountain of Romani, some feet
above sea-level, the arrival at the summit, cooking and
sleeping arrangements, were described. Mr. Kroner
and his companion were the first white men who slept
a night on that mountain. The lecture was illustrated
by forty-eight lantern slides, from photographs taken
en route by Mr. Kroner.

NATIONAL CHRYSANTHEMUM.

OCTOBER 21.—At a meeting of the Floral Committee
held at the Royal Aquarium on Monday last, First-
class Certificates were awarded to the following
novelties:—

Bessie Godfrey.—A beautiful and large flowered
Japanese. Colour yellow; florets drooping and in-
curved at the tips. From Mr. W. J. GODFREY, Exmouth
Nursery, Devon.

Ernest Crinson.—An excellent crinson Japanese,
shaded purple, very large flower. From Mr. W. J.
GODFREY.

Maudslayi.—A deep, brownish-red Japanese, with
rather short, broad florets; blooms large, and showing
full reverse of florets. From Mr. W. J. GODFREY.

Paul Mary Anderson.—A pretty pink sport from the
well-known single-flowered variety. From Mr. H. J.
JONES, Keyport Nursery, Lewisham.

Triumph (W. J. GODFREY).—A crinson Japanese,
having a purple shade not observed in the blooms
shown at the Drill Hall a week previous.

Phie d'Or.—A yellow flowered decorative variety, in
which we could see no special value. From W. & R.
OWEN, Castle Hill Nurseries, Maidenhead.

Bright Sport from Soleil d'Octobre.—A sport from this
well-known and useful decorative variety, with deep
coloured flowers. From Mr. GEO. PINKETT, St. Ann's
Road, South Tottenham.

There were also some promising varieties staged by
Messrs. H. CANNELL & SONS, Swanley, and Mr. W.
BAXTER, Melchett Court Gardens, Bournemouth.

—A meeting of the executive committee was
held at Carr's Restaurant, Mr. Thomas Bevan in
the chair. A letter was read from Sir Albert K. Rollett,
M.P., accepting nomination as President of the Society
in the room of the late Sir E. Sommers, and also
expressing his willingness to take the chair at the
annual dinner on November 27 next. Sir A. K. Rol-
lett, M.P., was elected President of the Society by
acclamation. Resolutions of sympathy and con-
dolence were passed and ordered to be sent to the
relatives of the late Mr. Martin Hope Sutton and Mr.
Thomas Roehford, both supporters of the Society. Mr.
C. Harman Payne gave an account of his visit to a
recent exhibition of early Chrysanthemums at Paris,
and stated that English productions by no means
suffered by comparison with those of France. The Secretary
reported the amount of prize-money awarded at the
October shows, and also the medals awarded in the
miscellaneous division, and a financial statement to
date, showing a substantial balance in hand, was con-
sidered highly satisfactory.

The publication of the new catalogue will be deferred
until early in the ensuing year. It was agreed that
a deputation should wait upon the Directors of the
Royal Aquarium in reference to future arrangements
with the Society. Fourteen ordinary members and one
Fellow were elected.

Obituary.

JAMES SERVICE, MAXWELLTOWN, DUM-
FRIES.—We regret to announce the death of
Mr. James Service, of the Corberry and Jano-
field Nurseries, Maxwelltown, Dumfries, which
occurred on October 15. Mr. Service, who
was in his seventy-seventh year, was an Agricul-
tural man, though his early years were chiefly
spent in Ayrshire and Bute-shire. His
father was a farmer in an extensive way of busi-
ness, and the son, after a short time spent on
the farm as a herd-boy, was apprenticed to

the firm of Sanson & Co., nurserymen, of Kil-
marnock. Thence he went to Coodham, near
Ayr, and in 1818 he was appointed as head
gardener to Colonel MacMurdo, of Mavisgrove,
Dumfries, and afterwards served Lord Justice
Hope, at Netherplace, Mauchline. He next
went to Houghton House, Carlisle.

In 1858 Mr. Service established at Green-
brae, Dumfries, a small nursery, principally
for florist's flowers, which eventually became
one of the leading businesses of its kind in the
south of Scotland. Here he adopted what was
at the time considered a great innovation, and
one of which he always spoke with much pride,
the reduction of the price of Dahlias from the
general list which were of any value from about
1s. each to 3s. per dozen, and thus brought
down the prices of the great English growers.
At that time Dahlias, Pansies, Hollyhocks, and
other florist's flowers formed his chief stock in
trade, and low prices were asked for all.

From Greenbrae he removed to Corberry
Nursery. In more recent years the advance
of building operations led him to acquire land
at Janefield, whither a portion of the business
was transferred. By dint of energy and
straightforward dealing, Mr. Service soon
secured a very extensive nursery and seed
business, in the management of which his sons
Robert and Joseph assisted.

For years he was a successful exhibitor of
Gladioli and Dahlias, and a trustworthy judge
at shows. In all the concerns of life Mr. Ser-
vice was a most conscientious man, and his
loss will be felt by all who knew him.
S. Arnott.

JAMES HILL.—At Newport, R.I., U.S.A., on
Thursday, September 28, passed away James
Hill, gardener for Mr. Mortimer Brookes.
James Hill was a well known gardener, who more
than a quarter of a century ago came out to
the United States to take charge of the noted
gardens of Gardenier Brewer, "The Boston
Merchant Prince," situated on the west end of
Bellevue Avenue. It was "The Place" on
the Avenue in those days, and to-day holds
its own on every point of good gardening to
the credit of the gardener, who "never knew
it all," and was never too old to learn any-
thing that was modern in gardening matters.
James Hill was, previous to his Atlantic
migration, gaining notoriety in the cultivation
of Orchids for Sir William Marriott, at
Down House, Dorsetshire, England, from
which many Orchids found their way to the
London shows. *Disa grandiflora*, *Phalenopsis*,
Dendrobium, *Odontoglossum*, and *Anacochilus*
were very well done. Here also were
some fine flowered bits of *Cattleya exoni-*
ensis, which was shown in the United States
of America as an unknown new variety. *James*
Holloway, Glen Cove, N.Y., U.S.A.

REV. H. EWBANK.—It is with deep regret
that we have to announce the sudden death on
the 19th inst. of this gentleman, in the seventy-
fourth year of his age, at St. John's, Ryde.
Mr. Ewbank had for many years been Vicar of
the parish of St. John's, in the immediate
vicinity of Ryde, but three or four years ago
he resigned his charge, still continuing to
reside at St. John's, where he had formed a
garden remarkable for the rarity and interest
of its contents. Mr. Ewbank loved plants
for their own sake, not merely as garden de-
corations, and his success in their cultivation
was quite as much due to his sedulous care as
to favourable climatal conditions. Mr. Ew-
bank had been for many years an occasional
contributor to our columns; and his letters
from Rome a few years since attracted much
attention.

TRADE NOTICE.

W. FELL & CO.

The old-established nursery firm of W. Fell & Co., of Hexham, Northumberland, published in the *Hexham Herald* of October 19 the prospectus of the firm as a limited liability company, with a share capital of £20,000. This capital is divided into 10,000 cumulative preference shares of £1 each, bearing a cumulative preference dividend of 45 per cent. per annum, and being also preferential as to capital; and 10,000 ordinary shares of £1 each. The vendors will take 5,500 ordinary shares in part payment of the purchase price; and 2,500 ordinary, and 6,000 preference shares are being offered at par for public subscription. The remaining 4,000 preference and 2,000 ordinary shares are reserved for future issue. The directors of the new company are Mr. Wm. Fell, Hexham, nurseryman, chairman; Messrs. Thos. Atkinson, (Geo. Hogarth Bell, and Wm. Milne; secretary, Mr. R. H. Robson, 5, Priestpopple, Hexham. The subscription list closes on Thursday, October 31.

ENQUIRY.

WEIGHT OF JAPANESE CYCAD STEMS.—A Russian correspondent desires to know the approximate weight of Japanese Cycas stems as imported without roots or leaves, and about 4 to 1 1/2 feet in height.

MARKETS.

COVENT GARDEN, OCTOBER 21.

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

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s.d.	s.d.	s.d.
Asparagus Fern, bunch...	1	0	2
Carnations, per dozen blooms	1	0	2
Cattleyas, p. doz.	0	8	2
Eucharis, p. doz.	1	6	2
Gardenias, doz.	1	6	2
Lilium Hartwegii, doz. blooms	1	0	2
Lilium lancifolium, album, p. doz.	3	0	4
Lilium rubrum, per dozen	3	0	5
Lilium longifolium, per dozen	4	0	6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s.d.	s.d.	s.d.
Apples, home-grown, Wellingtons	0	8	1
Warringtons	0	8	1
Warne's King	0	8	1
Greenberries, &c., per sieve	2	0	3
Co's Sea King	4	0	7
Nova Scotia, various, per barrel	16	0	25
Ribbons, per sieve	2	0	4
Bananas, bunch	0	6	0
—Jossé, p. doz.	1	0	4
Blackberries, per peck of 12 lb.	1	0	2
Cherries, p. doz.	3	0	8
Cobnuts, Kentish, per lb.	0	7	0
Cranberries, case 12 1/2	0	6	0
—Swedish, do.	0	6	0
Damsons, p. sieve	2	0	3
Figs, per basket	1	0	2
Grapes, Alicante, home-grown, per lb.	1	0	2
—do, B.	0	6	0
—do, E.	0	6	0
—do, F.	0	6	0
—do, G.	0	6	0
—do, H.	0	6	0
—do, I.	0	6	0
—do, J.	0	6	0
—do, K.	0	6	0
—do, L.	0	6	0
—do, M.	0	6	0
—do, N.	0	6	0
—do, O.	0	6	0
—do, P.	0	6	0
—do, Q.	0	6	0
—do, R.	0	6	0
—do, S.	0	6	0
—do, T.	0	6	0
—do, U.	0	6	0
—do, V.	0	6	0
—do, W.	0	6	0
—do, X.	0	6	0
—do, Y.	0	6	0
—do, Z.	0	6	0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s.d.	s.d.	s.d.
Adiantums, doz.	5	0	7
Arbor-vitæ, var., per dozen	6	0	6
Aspidistras, doz.	18	0	6
—specimen, ea.	5	0	6
Cannas, per doz.	18	0	0
Crotons, per doz.	18	0	0
Cyclamen, p. doz.	8	0	0
Dracenas, var., per dozen	12	0	0
—viridis, doz.	9	0	0
Eriodan, doz.	12	0	0
Eucynias, var., per dozen	6	0	1
Evergreens, var., per dozen	4	0	1
Ferns, in variety, per dozen	4	0	1

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s.d.	s.d.	s.d.
Artichokes, Globe, per dozen	2	0	0
—Jerusalem, p. sieve	2	0	0
Beans, home, dwf., per sieve	1	3	6
—runners, per bushel	2	0	0
—dwarf, house, per lb.	0	9	0
Beetroots, new, per bushel	1	0	0
Brussels sprouts, per lb.	1	0	0
Cabbage, tully, per doz.	3	0	0
—dozen	0	9	0
Carrots, per doz.	2	0	0
—washed, bags	2	0	0
—unwashed, bag	1	0	0
Cauliflowers, tully, per doz.	1	0	0
—dozen	0	9	0
Celery, per doz.	1	0	0
Celery, 12 bunches, per doz.	0	9	0
Chicory, per doz.	0	4	0
Cress, per doz.	1	0	0
—pennet, per doz.	1	0	0
Cumbers, doz.	2	0	1
Endive, new, per doz.	1	0	0
—French, doz.	1	0	0
Garlic, per lb.	0	2	0
Horseradish, foreign, bunch	1	0	1
—dozen	1	0	1
Lettuces, Cabbage, per dozen	0	9	0
—Cos, per score	1	0	0

REMARKS.—Rubber Beans have improved in price. Colewort Cabbage has also improved, and with roots, such as Carrots, Turneps, &c., becoming good. Quinces in plenty in crates and in pots from 2s. to 10s. Medlar good in crates, 2s. to 10s. per box. Peaches, at 1s. to 1 1/2s. per dozen. The quality is not so good. Californian Plums, Golden Drop, &c., at 6s. per case. Japanese oranges, 10s. to 12s. per case. Corn Cobs, 9d. to 1s. per dozen.

PEAS.

Various sorts, 5s. to 7s. *John Bull*, 3s. 4d. *Wellington Street*, Covent Garden.

SEEDS.

LONDON, October 25. Messrs. John Snow & Sons, Seed Merchants, of Great Maze Pond, Borough, London, write that no attention is to be given to Clover seeds; meantime prices of root, excepting as regards Alsike, promised to be low. If grasses are also neglected. For winter Tares and seed Ryegrass is slow, whilst moderate prices prevail for Mustard and Rape seed. There is a good inquiry for Eclipse and Longpods Beans, and also for Windsor Beans. Longpods meanwhile come cheap and good. The new Scarlet Runners are also reasonable. Bird-seeds continue inactive, but Linseed is dearer. For Blue Peas, Haricot Beans, and Spanish Lentils the inquiry is meagre.

FRUITS AND VEGETABLES.

GLASGOW, October 25.—The following are the averages of the prices recorded since our last report: Apples, English, 12s. to 18s. per cwt.; American and Canadian, King's, 28s. to 32s. per barrel; Greenings, 21s. to 25s. do.; Baldwin's and Northern spines, 21s. to 25s. do.; other varieties at similar prices. Bananas, Canary, 8s. to 12s. per crate; Pears, Bourne Business, 4s. to 6s. 6d. per case; Grapes, English, 1s. to 1s. 6d. per lb.; America, common, 8s. to 10s. per barrel; ordinary, 10s. to 12s. do.; good, 12s. to 16s. do.; Tomatoes, 1s. to 2s.; Lemons, 12s. to 15s. per half chest; Citrus, 10s. to 12d. per lb.; Mushrooms, 1d. to 1s. do.; Onions, Valencia, 5s. to 6s. 6d. per case.

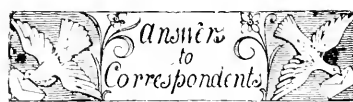
LIVERPOOL, Oct. 25. *Wholesale Vegetable Market*.—Potatoes, per cwt.: Up to Date, 2s. 6d. to 3s. 3d.; Main Crop, 3s. 6d. to 4s. 6d.; Bruno, 2s. 6d. to 3s.; Lynn Crays, 2s. 6d. to 3s. 6d.; Turneps, 6d. to 8d. 12 bunches; Swedes, 4s. 6d. to 5s. per cwt.; Carrots, 6d. to 8d. per doz. bunches; Onions, English, 4s. to 5s. 6d. per cwt.; do. foreign, 2s. 6d. to 3s. 6d. do.; Parsley, 6d. to 8d. per dozen bunches; Cauliflowers, 1s. to 1s. 6d. per doz.; Cabbages, 1d. to 1s. 6d. do.; Celery, 1d. to 1s. 6d. do.

St. Johns Potatoes, 18s. per peck; Grapes, English, 1s. to 2s. per lb.; do. foreign, 10s. to 12d. do.; Pine-apples, English, 6s. to 7s. each; Apples, 2d. to 3d. per lb.; Pears, 3d. do.; Tomatoes, 1d. to 6d. do.; Bonsons, 3d. do.; Cucumbers, 3d. to 4d. each; Mushrooms, 1d. to 1s. per lb.; Birkhead's Potatoes, 10d. to 1s. per peck; Cucumbers, 2d. to 4d. each; Grapes, English, 1s. to 2s. 6d. per lb.; do. foreign, 4d. to 8d. do.; Pine-apples, English, 2s. to 3s. each; Mushrooms, 1d. to 1 1/2d. per lb.; Fibbert's, 1s. do.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qt.), for the week ending Oct. 19, and for the corresponding period of 1900, to either with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.		1901.		Difference.
	s.	d.	s.	d.	
Wheat	28	4	25	10	3
Barley	26	8	26	8	0
Oats	16	11	17	8	9



AMARYLLIS BELLADONNA: J. H. S. The treatment you have given the bulbs has been improper. They should not be disturbed at the root more often than is necessary, and the best time to pot them is just previously to the flowering period, when new roots are about to be made. They should be potted firmly to the number of three or four in 8-inch pots, or singly in small 3 1/2-inch, and in loam three-quarters, leaf-soil one-quarter, and a little sharp sand if the loam be stiff. From the time the leaves begin to decay till the flower-spikes begin to show in late summer, the soil should be kept dry; that is, the pots should be laid on their sides on an earthen floor in the greenhouse, not put on a dry shelf. Whilst in flower, the bulb must be kept merely moist, and after the flowers are past and the leaves appear, more and more may be gradually afforded.

BEGONIA GLOIRE DE LORRAINE: J. P. & S. From the beginning of the year to March 11, 1899, are numerous articles dealing with this plant.

BROWNING OF PALM-LEAVES AT THE TIPS: *Siam*, W. A. This often occurs from the use of gas in the rooms, and is worse when the gas is not well purified from sulphur. Braising will likewise cause the leaves to turn of a brown colour, and excessive dryness of the air has much the same effect.

CATLEYA: W. G. The appearance of the Catleya-leaves is of the same nature as "spot," and is due to the presence of a fungus.

CHRYSANTHEMUM LEAVES: J. R. G. If you have grown Chrysanthemum for twenty years, and have never seen this pest before, you have been fortunate, because many collectors have suffered terribly from the scourge during the past five years. The disease is caused by a fungus (*Puccinia Hieracii*), and known as the "Rust." We must refer you to the illustration and description published in *Gardeners' Chronicle*, Oct. 8, 1898, p. 293. Also to the "Rust" Conference held by the National Chrysanthemum Society, and reported in *Gardeners' Chronicle*, Oct. 15, 1898, p. 295.

GARDEN STAFF OF WORKMEN: *Le Mithras*. We are surprised at your being equal to the task, with the help only of two unskilled young men, of keeping the garden even fairly presentable. At the least, one more young active man is needed.

GIBB IN APPLE-TWIG: E. T. Crab of the Leopard moth, *Zenzera pascali*, often figured in our columns. Hook the insect down with

a curved wire, or insert a piece of cotton-wool steeped in a solution of cyanide of potassium, but remember it is very poisonous!

LEADS GARDENERS' ASSOCIATION: E. K. A correspondent would be glad to know the correct address of this Society, and the name of the Secretary.

LILIUM ATRAPURM AND L. LANCIFOLIUM: J. H. S. Excepting in light soils in the warmer parts of the country, the bulbs should be lifted, as soon as the stems show signs of decay, and laid in damp sand or charcoal dust; or potted firmly in loamy soil in pots just large enough to hold them, and kept on an earthen floor in a cold pit. As a safeguard against rats and mice, cover the pots with a tile or slate.

LILY OF THE VALLEY: A. P. Dig or trench the ground deeply, heavily manuring it if it be in poor condition. Let this be done in early winter, and in early spring take up your old roots, sorting them into three classes—those with the biggest buds for flowering the next year, the next largest to flower one year later, and the weakest that will bloom in the third year—and plant each lot by itself in beds or lines. The plants should be planted with the roots spread out, in drills drawn at about 8 inches apart, and in the drills they should stand at 6 inches. The plants that bloom the first year after planting will produce each a few young buds, but these will be three years old ere they produce flowers, and as the original buds bloom only once, there is nothing gained by letting the bed remain, as the offsets will grow much stronger if detached and planted by themselves on fresh soil.

MURELLO CHERRIES AND RED CURRANTS: H. F. Very well preserved on the trees and bushes, and quite fit for culinary purposes. They show to what good uses the northern aspect of a wall can be put.

*** * * NAMES OF PLANTS AND OF FRUITS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and generally involves some inconvenience, and a large expenditure both of time and money on our part. Delay is unavoidable. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: B. B., Kenworthy. Athorpe Crassane.—A. C. W. The fruits are immature, but we believe them to be the variety General Todtleben, an excellent large fruiting Pear, in season during December and January.—J. J. B. The wood and leaves from the two trees are much alike. Many thanks for the letter therewith.—J. L. 1, Imperiale; 2, Marie Guise; 3, Beurre d'Amant; 4, not recognisable in such a poor condition—G. D. 1, Serurier; 2, Golden Russet; 3, Besi Vaet; 4, Beurre Delfosse.—F. W. The fruits were received in such bad condition that it is impossible to name them to our satisfaction.—No name, dark green cardboard box, no letter received. 1, Horned Pearmain; 2, Cackle's Pippin; 3, Galloway Pippin; 4, Ribston Pippin; 5, Golden Noble.—J. A. A, Catillac; B, Beurre Hardy; C, Milan de Rouen; D, Brown Beurre; E, Autumn Bergamot. The Apple is Calville Rouge de Micoud.—D. R. 1, Calville Rouge d'Autonne; 2, Grenadier; 3, Yorkshire Greening; 4, Loddington; 5, Winter Greening; 6, Manks Codlin; 7, unknown.—W. H. D. 1, Crassane; 2, decayed.—M. A. 1, Amélie Leclerc; 3, Durondeau; 5, Summer Beurre d'Arcueil. The others were past recognition.—C. J., Tomneau.—A. T. W. 1, Warner's King; 2, Golden Russet; 3, Mahbot's Pearmain; 4, Minchal Crab; 5, Rousset de Moeestre; 6, Emerald.—E. B. 1, unknown; 2, Belle Rouennaise; 3, Duc de Nemours; 4, Dr. Andry; 5, Beurre Duhaime; 6, Bergamotte Hertrich. W. D. A. Apples, 1, not received; 2, Bristol Pearmain; 3,

Smart's Prince Arthur. Pears, 1, Welbeck Bergamot; 2, Rondelet; 3, Comte d'Égmont.—G. H. S. White Doyenne. This Pear possesses at least fourteen synonyms, some of which are in general use. A. C. Y. 1, Comte de Flandre; 2, rotten; 3, Beurre d'Amant; 4, Loddington; 5, Scarlet Leadington; 6, Kentish Pippin.—D. C. Beurre Dupont, a little known Pear, but by no means a novelty.—M. P. R. Please oblige us with your name and address (not for publication), and kindly state if possible the year and the month when the previous communication was made. The two fruits sent reached us in good condition, and will be dealt with when we have your reply.—A. G. Calabasse bosc.

NAMES OF PLANTS: R. N. H. The flowers of *Oncidium* sent were dried up and colourless on arrival, and beyond recognition.—W. C. L. The Sunflower is most probably *Helianthus californicus nanus*, fl. pl. In such things leafage or complete inflorescence is most helpful, the mere tops of the flower-heads being insufficient.—A. H. Dundee. *Solanum rostratum*.—P. J. L. 1, *Sequoia gigantea* (Wellingtonia); 2, *Retinospora plumosa* of Gardening, a form of *Cupressus pisifera*; 3, *Cupressus* (Thuopsis) dolabrata; 4, *Diplorhynchus chrysoxyllus*; 5, *fastigiata* form of *Cephalotaxus diapaucica*; 6, *Berberis Darwini*.—J. M. Specimens badly packed, and labels all but illegible. *Hippophae rhamnoides*, no label, spiny shrub; 3, Sambucus, Elder; 1, *Sambucus nigra*, with variegated foliage; 5, *Spiraea Douglasii*; 6, *Dimorphandria* (Aralia) *mandschuriana*; 7, *Sequoia gigantea* (Wellingtonia).—G. B. M. Redhead. 1, *Phillyrea media*; 2, *Carbenia benedicta*.—W. C. S. Two *Staticeae*. The coloured form is apparently a variety of *S. sinata*; the white variety is *S. spicata*. Another time please number your specimens and send leaves, as these materially assist identification.—W. Sinclair. *Begonia sinuata*, *Mesembryanthemum coarctatum*, *Oxalis Bowleyi*, *Pellaea rotundifolia*.—W. C. Adiantum Waltoni, a garden-raised variety.—W. H. W. The garden-raised varieties of *Caladium* are so numerous, and the foliage of the same plants so dissimilar, that it is not easy to name them without comparing with growing plants; 2 is near to *C. Cannanerti*, of the Chantini section; 1, *C. Wrightii*.—H. L. 1, *Elaeagnus europaeus*; 2, *Polygonum cuspidatum*; 3, *Yucca gloriosa*, so far as we can guess without seeing the plant; 4, *Catleya Loddigesii* var. *maculata*.—W. S., jun. *Miltonia candida*.—W. H. S. Probably a "seedling" from *A. gracillimum*.—S. M. H. 1, *Adiantum formosum*; 2, *Scelaginella cœvsa arborea*; 3, *Anthurium crystallinum*; 4, *Maxillaria pieta*; 5, *Rondeletia speciosa*; 6, *Draena stricta*.—C. J. P. Probably *Solanum Warszewiczii*.—R. L. 1, *Codium Mooreanum*; 2, *C. Disraeli*; 3, *C. Williamsii*; 4, *C. nobile*; 5, *C. interruptum aureum*; 6, *C. Queen Victoria*.—H. Warren. 1, *Aster ericoides*; 2, *Helianthus decapetalus*.

NEVER FAILED TO GET A SITUATION: A. L. We are pleased to know that by advertising in our columns you have never failed to obtain a post as head-gardener.

PALM FUNGUS: E. K. *Graphiola phœnicis*. Burn the affected leaves, and wash the others with Gishurst soap.

PEAT-MOSS FROM THE STABLES AS A MANURE FOR CUCUMBERS, TOMATOES, &c.: W. P. Provided the moss is thrown into a heap, and allowed to ferment, and then turned, the sides into the middle and again fermented, and allowed to partially decay, it will be almost as good as ordinary litter. In the fresh state as removed from the stables, it is of little value as a manure.

PHYSALIS EDULIS, "Cape Gooseberry": F. O. C. Well grown fruits, but intensely acid. We can scarcely believe that anyone but a schoolboy would fancy them for dessert.

POTATO: R. B. The overgrowth or "hypertrophy" is probably the result of the injury

inflicted by some insect.—J. M. It looks like one called The Congo.

PRESERVING FRUITS OF TAUSONIA AND PASSIFLORA: W. W. In the same manner as Plums, Peaches, &c., are preserved whole in bottles, we should suppose. Can any of our readers suggest a better?

PUMPKINS: J. M. S. Forms of *Cucurbita*, of which there are many, mostly natives of subtropical and tropical countries. The common Pumpkin, *C. Pepo*, comes from the Levant.

PURCHASABLE LECTURES ON GARDENING: If "A. B. C." will communicate with us, giving his address, we will forward it to a probable purveyor of lectures.

R. H. S. CERTIFICATE: A. B. C. You would do better to direct your enquiry to the Secretary of the Society, 117, Victoria Street, Westminster, S.W.

ROOT GALLS: Correspondent. The galls are formed by Gall-flies (*Teras terminalis*), which emerge from the common Oak-apples. They lay their eggs on the roots of the Oak, and the grubs form the galls, the insects produced from these galls are wingless parthenogenetic females, known as *Biorhiza aptera*. *Geo. S. N.*

ROSE: W. H. T. "Sporting" is not uncommon in Roses. We cannot at this season say if yours would be worth propagating.

SCARBOROUGH LILY: J. H. S. This species (*Valota purpurea*) requires somewhat similar treatment to *Amaryllis belladonna*, and the bulbs to the number of five to seven may be potted in June or July, and kept in a cold frame or the greenhouse till established. Undisturbed plants do very well in a partially sunny place out-of-doors from July to early September. A rich, loamy soil, fairly compacted by hand pressure, is best for them, mixing leaf-mould and sharp sea or pit sand with it in quantity according to its texture. During winter, spring, and early summer, the plant should be accommodated on a greenhouse stage near the light. It is an evergreen plant, and should not be dried off entirely.

SHOW-BOARDS, CUTS, &c.: G. R. Sold by florists' and horticultural sundriesmen. We cannot recommend dealers.

TWIN APPLES: A. B. A capital example of the union of two blossoms, and of the fruits making almost equal growth.

VIOLET-LEAVES SPOTTED: G. F. and W. C. See reply in our last issue, p. 300, col. C.

WEED ON LAWN: H. G. *Prunella vulgaris*. Take them up with a spud, and apply a top-dressing of stable manure and loam.

WOODLACE: Amateur. We fear that you read your *Gardeners' Chronicle* inattentively, or you would not have to ask how to rid the glasshouse of the insects. We would refer you to the most recent allusion to the matter in our issue for September 7 last, p. 196.

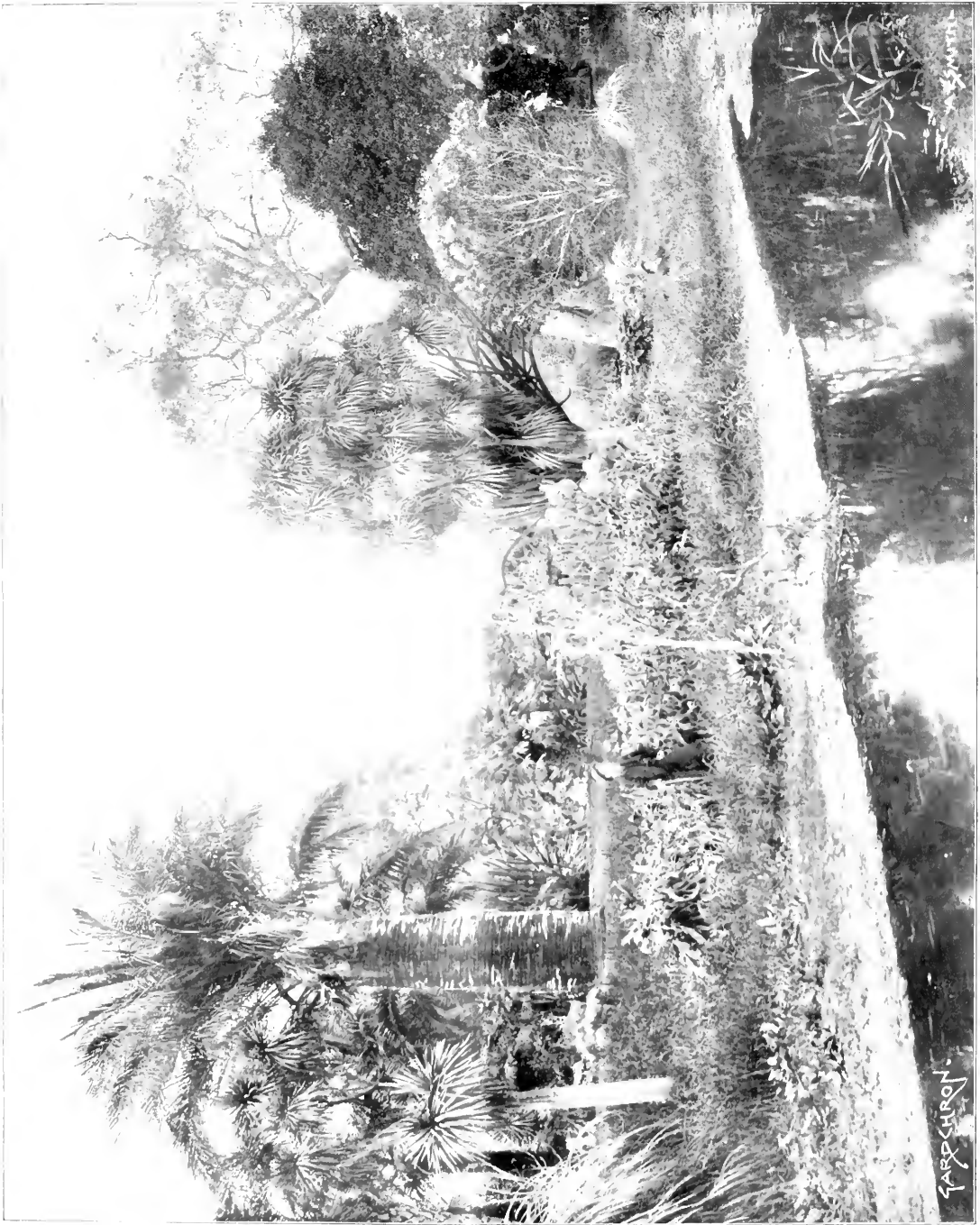
YELLOW RUST ON LEAVES OF CYNARA: C. H. *Ædium compositarum*, var. *Tussilaginis*—a fungus common on Coltsfoot and Butter-bur. Sulphide of potassium at the strength of $\frac{1}{2}$ oz. in a gallon of water sprayed on the lower surface is useful as a preventative.

COMMUNICATIONS RECEIVED:—W. E. G.—R. B. M.—C. B. C.—F. W. B. (with thanks)—Baron S. St. Petersburg.—J. G.—W. J. C. Greenway.—W. Pell & Co.—H. F.—W. G.—C. W. H. G.—A. and McL.—Hereford.—A. E.—A. B. C.—R. C.—O. W. G.—F. W. C.—F. E. S.—R. L.—Miss G.—C. J. H. L.—G. F.—W. D.—J. S. Murray, bulbs not to hand.—E. W. & Sons.—H. S. Newland.—C. A. Y.—R. H.—W. F. L.—J. McLellan.—J. R. K.—R. J.—R. D.—E. S.—H. E. F.—O. B.—C.—T. W. P.—W. H. D.—C. W. D.—H. K.—C. S.—J. G.

Continued increase in the Circulation of the "GARDENERS' CHRONICLE." IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, never been

82 TREBLED. 53

(For Trebled, see p. x.)



LOWER CREEK, ABELEAU BOTANIC GARDEN.

YARASURON



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HYBRIDISATION AND RAISING OF ORCHIDS.

CORRESPONDENTS often seek information on these interesting subjects, but seldom does such a puzzling communication as that sent by 'Cratinodé' arrive at the office. He says: "I have often thought I would like to write you, asking if you would kindly give a few words on the fertilisation and raising of Orchids from seeds. No details, however apparently unimportant or trifling, would be too elementary for such as myself, who know practically nothing about the subject. For two years now I have succeeded in getting seed-pods to form on plants of Laelia anceps and L. albida, but never a seedling, although I have tried almost all positions. Details, such as the best time to fertilise, age of flowers, time of sowing, position of seed-pans, &c., would be welcomed by me, and doubtless by others."

By this it may be inferred that the flowers have been properly fertilised, and seeds obtained. But even in these enlightened days the structure of the Orchid, with its organs of reproduction massed in the column, and not visibly displayed, as in most other plants, with the pistil and stamens well

defined, has proved a bar in the way of progress in hybridising them; and yet the operation of fertilising Orchid is almost as simple as fertilising any other flower, and the various parts can easily be ascertained by examination. If the anther-cap be removed, the pollinia are disclosed; a longitudinal incision of the column from its apex to the ovary at its base reveals the duct or canal leading from the stigmatic surface to the ovary, and plainly indicates that the pollen masses taken from the one flower should be placed on the stigmatic surface of the flower intended to be fertilised. That done, the pollen tubes push down into the ovary, and their contents fertilise the ova. There is nothing else for us to do but to suspend or place the plant in suitable quarters until the seed-capsules swell, and in the course of some months commence to split, a process which indicates that the seeds may then be sown. But it is by no means certain that good seeds are there, for Orchids have a habit of developing their fruits in many cases without their containing good seeds, and in many more cases the proportion of good seeds to chaff, as it may be called, is very small.

Seeds, or what seem to be seeds, having been obtained, curiosity prompts the possessor to endeavour to ascertain whether they are good or not, and examination with a strong lens or microscope will give a rough though not infallible test, for it will be seen that the seeds are in a more or less elongated membranous sac. In the centre of the good ones there will be a small germ, while the bad seeds will not possess any. But cases have been known where the seeds have germinated well although the embryo was so minute as to escape detection.

Failure probably often arises from fertilising the immature flower. With Orchids, as with other flowers, the operation should not be effected until the flower is fully mature, and the viscid substance on the stigmatic surface, by becoming more viscous, indicates that it is in a fit condition. It has been alleged that in the case of some Orchids which do not seem to cross freely, the scarcity of the viscid vehicle in which to start the pollen on the stigmatic surface may be the cause, and the suggestion has been made that better results might be obtained by transferring the viscid substance from the stigma of the plant from which the pollen is to be taken to that of the one intended to be fertilised, and placing it in position on the stigmatic surface before the pollinia are laid on it, but so far no information as to the results has been obtained.

Given good seeds it seems to be a very simple matter to raise them, provided suitable quarters can be found. Many are experimenting in Orchid raising and with good results, although the methods adopted in each case seem to differ. It seems, then, that in raising Orchids, as in general Orchid culture, every operator has to work out his own methods, or at least adapt those pursued by others to his own accommodation and convenience. By far the greater number have sown the seeds on the surface of the soil of the plant which supplied the seeds, or on some similar plant, which could be counted on being retained, and some still pursue that course; but others prepare seed-pans for the sowings, and in this, as in other particulars, each raiser has his own methods, and generally different from his neighbours.

Seedling Orchids are said to take kindly to the leaf-soil which is now being used in some

gardens, and the latest method is to make a mixture of one-tenth good, fibry Orchid-peat, one-tenth chopped sphagnum-moss, and the other eight parts of leaf-soil. This mixture is used for small seedlings, and it is said that the seeds germinate well on it also. But in using any new material for Orchids great caution should be observed, and it is better to experiment tentatively with the new material, but rely on the old practice until disproved.

Another method is to place pieces of tree-fern stems in shallow pans holding water, and to sow the seeds on them. One successful amateur makes up Orchid-baskets with peat and sphagnum-moss, and places a roughened bar of oak-wood, similar to those of which the basket is made, underneath the top bars and resting on the compost, and after soaking the wood with water, sows the seeds on them.

Still another method is to have dishes of wood with the rough fibres left on the surface, boiled to get anything likely to be injurious out of them, and then place them flat in earthenware pans holding water, and sow the seeds on the upper surface. In any case they must be kept constantly moist without watering overhead, and with ordinary care plenty of the little spherical green bodies, which represent the first stage of Orchid-life, can easily be obtained.

Porous bricks sunk in pans of water to the depth of an inch, on which some cultivators raise Ferns from spores, might answer, &c.]

Some say that this is a stage at which they never arrive, while the successful ones, who can get their seeds to germinate freely, say that that is the time when their troubles begin; and that with the appearance of the first green stage of vegetation come a hitherto unsuspected host of insects, many of them very small, but all longing for fresh vegetable food, and intent on clearing off the seedlings as fast as they appear. If the latter escape the attentions of these creatures, then there is the green film of coniferoid growth to reckon with, which smothers the young plant; or the dreaded blotch of fungoid growth which begins at one spot, and soon spreads over the surface of a sowing. Therefore most raisers agree that the young seedlings should be pricked off as soon as possible, several together in the small pots previously prepared for their reception, and after the rooting commences, each should be given its own little thimble-pot in which to establish itself.

All agree that the most important factor in raising Orchid seedlings is a suitable place to carry out the operation. Several have been fortunate enough to have such a small, warm house in which it is generally thought Phalenopsis thrive, and in a house of this sort the seeds germinate in the prepared pans without being protected by a seed-case or frame. Mr. H. J. Chapman was fortunate enough to find such quarters, and he discovered that the seedlings came up in it uncovered as well as in a case which he also uses.

On the other hand, the raising of Orchid-seeds has frequently been attempted in houses seemingly suitable, but in which it has afterwards been proved that the seeds would not germinate. The failure probably generally arises from the atmosphere of the house being too dry, and the artificial heat in the house exhausting instead of supporting. In such houses, light frames over which movable sheets of glass can be placed, will sometimes remedy the defect, but in similar houses the atmosphere and general heating of the house should be carefully arranged, in order to obviate the defects suggested by the

former failures. Rain-water should always be used to keep the material on which the seeds are sown moist; means of applying moisture to the surface in order that it may keep the whole uniformly moist should be provided, for it is not possible to water the pans overhead. When raising seedlings in pans, some provide an opening in the centre through which the water can be poured, so as to fall to the bottom and communicate moisture upwards; and the same means is adopted with small cases to wet the material on which the pieces of moss-fern, bark, or other material in which the seeds are sown, and preserves moisture in the whole. One thing is certain, and that is, that if the seeds, once they have commenced the first stage of swelling get thoroughly dry, it is fatal, and their chance of germinating is utterly destroyed.

The application of moisture to the seeds, when sown in pans, by immersion or dipping up to the rim of the pan, has been extensively practised, and with good results, although it is likely to cause the loss of the seeds by floating some of them off. One grower states that when he adopted that plan the seeds used to come up all over the place, and anywhere but in the pan where he sowed them, and consequently his records were useless. Troublesome as that is, "Crassinode" and many others would be quite content to put up with the inconvenience. *J. O'B.*

NEW OR NOTEWORTHY PLANTS.

SEMPERVIUM VELUTINUM, *N. E. Brown.*

ALTHOUGH I have been quite unable to find a description of this plant, it is by no means new to our gardens, having been in cultivation in the Jardin des Plantes as long ago as 1821, according to a specimen preserved in the Kew Herbarium. I first saw the plant in the collection of Mr. Wilson Saunders, at Reigate, between 1866 and 1870. In 1882 it flowered at Kew, and the following description of it was made at that time. Unfortunately its origin is unknown, but as it is a tender greenhouse plant, it probably comes from the region inhabited by the other arborescent species of *Semprevivum*, which comprises the Madeira, Canary and Cape de Verd Islands, the region of Cape de Verd itself, and Abyssinia.

Adult plant in the flowering state about 2 feet high. Stem stout, $\frac{3}{4}$ –1 in. thick, branching at first, puberulous, afterwards glabrous, marked with crowded linear-lanceolate leaf-scars. Rosettes of leaves 6–9 inches in diameter, very broadly and shortly fannell-shaped. Leaves crowded, $\frac{3}{4}$ –1 $\frac{1}{2}$ inches long, $\frac{3}{4}$ –1 $\frac{1}{2}$ in. broad, spatulate-oblancoolate, acute, of an opaque and slightly greyish-green, marked with darker green lines (immersed linear glands) beneath and sometimes on the upper side also, velvety-pubescent on both sides, ciliate with hairs of two kinds, some of them being rather stout and obtuse, $\frac{1}{2}$ – $\frac{3}{4}$ in. long, and the others very much finer and shorter. Flowering branches about 1 foot long, pubescent, laxly clothed with leaves gradually decreasing in size, divided at the top into a short, compact, corymbose cyme $\frac{3}{4}$ –1 inches in diameter. Branches of the cyme ascending, $\frac{1}{2}$ –2 inches long, pubescent. Pedicels 1–3 in. long, pubescent. Calyx about 8-lobed, lobes $\frac{1}{2}$ in. long, ovate-lanceolate, acute. Petals about 8–9, spreading $\frac{3}{4}$ – $\frac{3}{2}$ lines long, $\frac{1}{2}$ – $\frac{3}{4}$ in. broad, lanceolate, acuminate, glabrous, bright yellow. Filaments of the stamens bright yellow; anthers rather darker yellow. *N. E. Brown.*

ORCHID NOTES AND GLEANINGS.

CATLEYA IRIS (BICOLOR DOWIANA AUREA).

AT the meeting of the Royal Horticultural Society, September 21, Messrs. Charlesworth & Co., of Heaton, Bradford, exhibited and was accorded an Award of Merit for this desirable hybrid; and now a flower of it is kindly sent by T. W. Thornton, Esq., Brockhall, Weddon, who has also raised a batch of it. As with *C. bicolor* crosses in all cases the peculiar labellum, with its short side lobes, and elongated strap bearing the middle lobe, and the peculiar fleshy column not covered by the side lobes, is transmitted to the hybrid. It is a worthy florist's flower, with yellow sepals and petals, over which is a slight bronze hue. Side lobes of the lip small, pale rose, middle lobe rich ruby-crimson, column fleshy, whitish.

LILIO-CATLEYA CLAYE (CATLEYA DOWIANA AUREA LILIA ETHERET GRAVESIA).

A very pretty hybrid, now flowering in the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), and in its features it is easy to trace the influence of *Laelia crispata* and *L. Dayana*, which were the parents of the form of *L. × Enterpe* used on the one side, and in the beautiful golden veining of the central area of the lip, the markings of *Catleya aurea* are evident.

The flower measures $\frac{1}{2}$ inches across. Sepals lanceolate, petals broadly ovate and acuminate, both pale lilac-rose. Lip in shape resembling *Catleya aurea*, but smaller, 2 $\frac{1}{2}$ inches long, and 2 inches at its widest; bright purplish-rose, with a reddish-purple band running from the base to the centre in front, and on each side of which are very fine golden yellow veinings. *J. O'B.*

CATLEYA DOWIANA ALBA.

This fine yellow-flowered *Catleya* is the favorite *Orchid* of this season, and in the present year it seems to be flowering exceptionally well. A peculiarity has been noted that the flowers may vary in their colours from one year to another. Last year, Captain Holford, of Westonbirt (gr., Mr. A. Chapman), flowered a plant with very dissimilar markings and colourings of the flowers on the same spike, the one having the dark-purple, gold-veined lip of the typical *C. Dowiana*, and the other a crimson-purple lip with much less veining, but with the addition of two large yellow blotches on each side of the lip. Flowers of a precisely similar description, the one having the greater part of the lip bright orange-yellow, and the other being closely veined yellow on purple, are sent by G. R. de la Salle, Enbridge Lodge, Newbury (gr., Mr. Geo. Ellwood), who calls attention to their dissimilarity.

CATLEYA IMPERATOR, WIGAN'S VARIETY.

This handsome form of the natural hybrid of *C. granulosa* Schottiana and *C. labiata* first flowered in the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), in October, 1898; and it has since readily responded to the good cultivation which Mr. W. H. Young metes out to all the plants in his care, and is now again in bloom, its flowers exhibiting marked improvement on those previously shown. The outline of the flower, with its labellum having the front and side lobes distinctly separated, partakes much of *C. granulosa*; but all the plants are broadened by the influence of *C. labiata*. The sepals are 4 inches long, and 1 in breadth; petals $\frac{3}{4}$ inches long, and 2 in width; both sepals and petals of a light rosy-lilac colour,

with a slight yellowish tinge. The showy lip is 2 $\frac{1}{2}$ inches long, and 2 inches wide. Side lobes soft rosy-lilac tipped with purple, a broad red band running from the base of the lip to the showy dark ruby-purple, crimped front lobe, the isthmus between the side and front lobes having golden margins.

CYMBIDIUM GIGANTEUM.

ALTHOUGH this fine old species was the first of the Himalayan *Cymbidiums* to be introduced into gardens, it is now more uncommon than its ally, *C. Lowianum*, and others of its class. A well-cultivated specimen of it is a fine object, and such is the plant from which Mr. W. Seaman, gr. to C. Taylor, Esq., Margery Hall, Reigate, sends flowers, and which he describes as having three spikes with twelve flowers each, must be. Moreover, it is a very fine, dark-coloured variety. The flower sent is over 3 inches across, and has yellow sepals and petals, slightly tinged with green, and bearing nine or ten dark reddish-purple lines. The lip is bright yellow, blotched with red, and the column greenish-white, with a dark purple apex and purple spotting beneath. It makes a fine plant for a warm conservatory, like *C. Lowianum*.

SOBRALIA LINDENI.

Sobralia are not quite suitable plants for small glass-houses; but where there is enough head-room, and space can be given, they are stately objects, either in or out of flower. In older times, *Sobralia macrantha* used to make a telling plant in the collections of large specimens then in demand for exhibition; and it still is one of the most effective of large-growing *Orchids*, when seen well grown and flowered.

Captain Holford, of Westonbirt, has a good collection of them, and he considers them very satisfactory. The rare and pretty *Sobralia Lindenii* is in flower there, with pure white flowers, on the lip of which are about a dozen distinct branching purple lines, which change to red towards the base. It was illustrated in *Lindensia XIII.*, p. 21. The largest and handsomest *Sobralia* at Westonbirt is *Sobralia Holfordii*, which was imported with *S. xantholeuca*. It has very large, dark rose-purple flowers, and may be regarded as the perfection in size and colour in *Sobralia macrantha*.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

NOW that the manuring of the plant is so much better understood than formerly, we hear less of loss through the damping off of the florets. This mishap may be caused by other things, but the chief cause is too much artificial manure applied to the soil, such as sulphate of ammonia and nitrate of soda, which injures the finer roots, causes a check, and lowers the health of the plants. I have noticed that a sudden burst of sunshine following dull days will also set up damping of the florets, which is most marked on excessively-manured plants. *Chrysanthemums* in the open air, where artificial manures are not applied and the blooms merely required for house decoration, are seldom injured in this manner. Some growers think that the mishap is due to lack of air, and they forthwith throw open the ventilators and doors, causing a draught. Instead of doing that, I would advise the use of the hot-water pipes, ventilating freely in the front of the house, and only a little at the top. It is not the quantity of air so much as the manner in which it is applied that has to be studied.

Incurved blooms can be much improved and assisted in their development by timely attention. Seldom do we get blooms to develop evenly and well with out showing a few crooked or irregular petals. Instead of allowing the flowers to expand as they yield naturally, remove with a pair of tweezers all misplaced florets which would not become thoroughly incurved. Remove also all stamens which cluster in the centre of the flower and amongst the florets, for generally these prevent the petals growing and filling up the centre with regularity. It is surprising the improvement that takes place in the course of

sunny places in our southern counties. We have seen the plant year after year in the olden times flowering in the botanic garden at Oxford, and have also seen it at or from Cambridge, and in Mr. Ellacombe's garden. Its leaves are somewhat fleshy, and the large, pinkish flowers resemble at first sight those of a Passion-flower, but are widely different when looked into. It is the unopened flower-buds which are pickled, and for some reason or other always es-related with boiled mutton! Our illustration (fig. 99) was taken from a plant that flowered in the Royal Gardens, Kew.

lected. The supply of the latter is becoming exhausted. That *L. auratum* is collected was proven by the fact that no two consignments had the same colour of dirt on the bulbs. These Lilies were found in "pockets" in the mountains, usually growing at a depth of 18 inches, or a little more, below the surface. Unless *L. auratum* is more largely cultivated in Japan than now, the trade will not get the Lily very much longer from that country, and the price will become prohibitory. There is only now a supply of some 2,000,000 bulbs. On the other hand, *L. lancifolium* is plentiful enough; it can be grown anywhere, and there

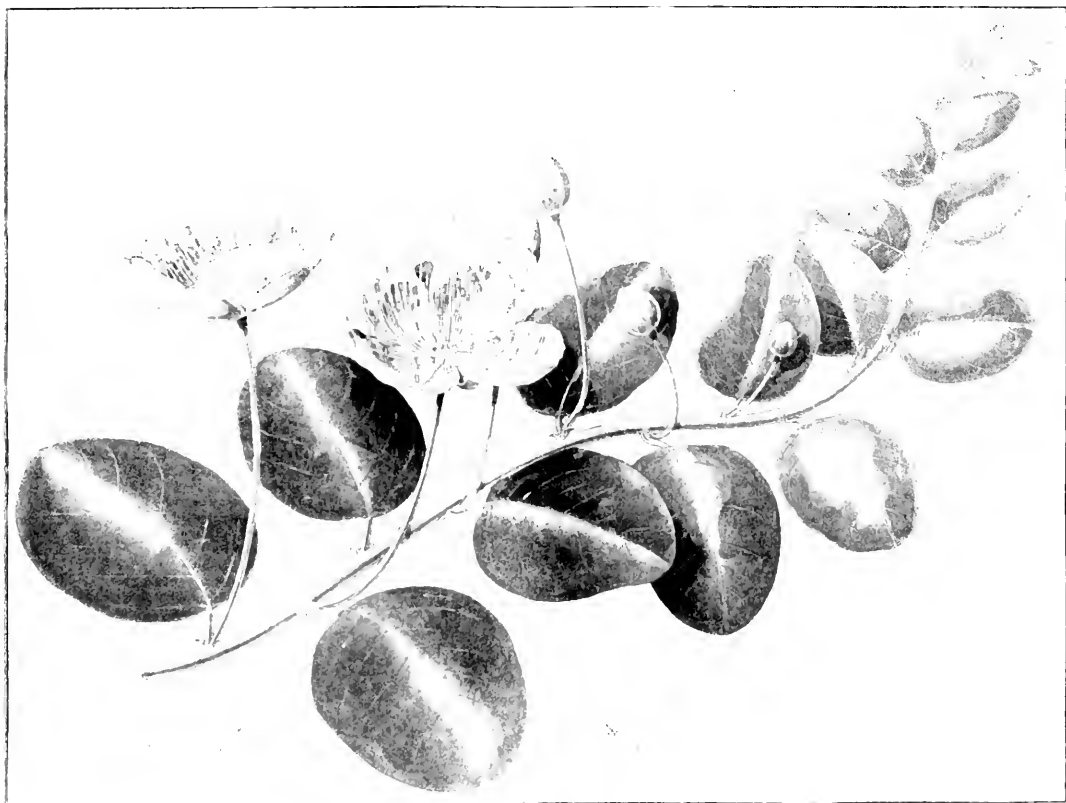


FIG. 99. *CAPPARIS SPINOSA*.

a few days in a partly-developed blossom by manipulating the petals in this manner, the florets increasing in size, and the whole bloom gaining in solidity and regularity. Blooms treated in this manner while on the plants do not require as much dressing, as the term goes, as those not touched before they are cut. *E. Molynaux*.

CAPPARIS SPINOSA.

YEARS ago it was considered a feat to induce the Caper-plant to grow, much more to flower. When one sees the wild plant flourishing on the dry walls and in the chinks of the rocks at Mentone and thereabouts, it becomes a subject for wonder that it is not more grown in dry,

HORTICULTURE IN JAPAN.

MR. JOHN K. M. L. FARGHAR, of Boston, Mass., delivered a most instructive and interesting lecture, illustrated with stereoscopic views, on "Horticulture in Japan." An abstract of the lecture was published in the *Florists' Review*, from which we extract the following:

"The florists and nurserymen of Japan derive more custom from the sale of tea in their gardens than from the disposal of plants and flowers. The Japs congregate in large numbers in these gardens to sip their favourite beverage and admire the plants and flowers, their devotion to which amounts to a cult. *Lilium lancifolium* was cultivated in large quantities in Japan; but *L. auratum* was col-

lected. Some scientists have recently supposed that *L. auratum* is a hybrid between *L. longiflorum* and *L. Henryi* (speciosum? Ed.). These scientists can never have been in Japan. *L. Henryi* was discovered in 1888, and two years ago some 306 bulbs of it could only be found in Japan. *L. auratum* was pretty widely distributed and fairly abundant until the supply became diminished by exportations. *L. longiflorum* is also abundant all over Japan; so that were *L. auratum* a hybrid, *L. Henryi*, one of its parents, would naturally be plentiful also, which however was not the case. The lecturer believed that *L. auratum* was a species. The bulb is used largely by the Japs as an article of food. *L. longiflorum* is extensively cultivated in the north of Japan. An effort is making

to get the natives to cultivate this Lily in the south of Japan, where it can be better ripened off than at Nippon. The trouble with the Japanese longidorums in the north is that they are dug before they are ripe. Were this Lily grown in the south, it could be had as early as Bermuda-grown stock, and free from disease. The true colour of the Japanese *L. longiflorum* should be yellowish; most of those coming from that country now are of the colour of the Bermuda bulbs. This was owing to too-early digging. While the stems are well grown, the bulbs are in a soft, tender condition when packed in the cases, and suffer from exposure to the strong sun on the docks at Yokohama, rendering the bulbs liable to attacks of fungus.

Ten thousand bulbs had been planted in Kuysho, in the south of Japan, and no doubt the florist will soon get Lilies from that district as early as from Bermuda. Mr. Farquhar spoke of the vacillating and unreliable nature of the Japanese merchant as compared with the Chinaman, who invariably will carry out his commercial contracts to the letter.

The gardens and nurseries around Tokio were then illustrated and described. There are in the neighbourhood of that city more of these establishments than are to be found around any other three cities combined in the world. The Japanese nurserymen are mostly specialists. The undergrowth of the country is very largely composed of Chrysanthemum and Bamboo plants; the former is used as a salad, much as Lettuce is here. One specialist in Morning Glories has some 150 distinct varieties, many of which are exceedingly pretty. This gentleman only obtains about four ounces of seed each year, worth about 50 dollars an ounce; so that one could draw his own inference when he found some of the so-called high-priced Morning Glory seeds offered at 10 cents a packet. The Japs were quick to catch on to the fact that such valuable seed was wanted, so they accommodated us by going out into the woods and collecting it. The Morning Glory plants are grown in pots, and it is almost impossible to get a supply of the high-class seeds of this plant unless by special arrangement.

Many of the dwarfed Japanese-trees are not so old as they are said to be. Close inspection of these dwarfs will often reveal the places where they have been grafted. Mr. Farquhar did not believe the fat to possess these dwarfed subjects would be lasting here, owing to the high price of the trees and the difficulty in keeping them alive.

Plants are more extensively sold in Japan than cut flowers, although many of the latter are also used. Funeral flowers are strung on poles, and mounted on cars, that form part of the funeral procession.

COLONIAL NOTES.

BERRIA AMMONILLA.

HERE and there in the island of Grenada this beautiful eastern tree may be met in the vicinity of present dwellings, and on sites where once stood residences. During August its pictorial effect is heightened by the delicate lilac-coloured flowers, which have an odour of Primroses. The large panicles stand well above the dark green heart-shaped leaves. When and why this useful tree was introduced I am unable to say. Probably the former well-to-do sugar planters brought it to Grenada. No special use is made of its hard timber in the colony. It fruits here in the first two or

three months of the year. Locally known as *Gran feuil*, which means in patois, "big leaf." *W. E. Broadway, Grenada, West Indies.*

MYRODIA TURBINATA, (SWIZZLE-STICK TREE).

From this tree, which is found growing wild in the cool, mountainous woods of Grenada, the "Swizzle-Stick" is cut. The branches grow out evenly in a circle or whorl from the main stem, and when the trees are small, they are cut off at the point which forms the better shaped stick, skinned, rubbed with sand-paper, dried, and are then fit for use. People sell small bundles for a shilling or so locally. Few houses in the colony but what possess at least one Swizzle-Stick as part of the stock-in-trade.

We have in the Botanic Station herbarium specimens which show the plant flowers in February, and that it fruits in the month of July. Occasionally another sort of Swizzle-Stick is brought over by people from St. Lucia, and as no one could say or give a clue as to its origin, I wrote to Mr. J. C. Moore, the Curator of the Botanic Station in that island, and he very kindly replied under date of May 12, 1898:—

"I can now give you information re the 'Swizzle-Stick.' I spent a day in the woods recently, and hunted out the tree which is known locally as 'Wild Bread-fruit' or Bois-Paine. I had a tree cut down, and succeeded in getting two flowers, and found it to be *Magnolia Plumieri* (see *Griseb. p. 3*, where it is fully described), and as you will see, the part used is the rachis." *W. E. Broadway, Grenada.*

VIBURNUMS.

UPWARDS of thirty species of hardy Viburnums are in cultivation at Kew, but a large proportion of these have no special value for the ordinary private garden. In the notes that follow, I have mentioned those that I consider the best as ornamental shrubs; there are, of course, others nearly as good, and in themselves well worth growing, but they do not differ from those included in the following selection sufficiently to make them necessary except in places where collections are formed. All those mentioned are of easy culture and propagation, but they prefer a rich, and especially a moist, soil. The American species frequently affect damp, and even swampy places. The flowers of all are white, but sometimes rose-tinted, sometimes yellowish. All the sorts can be increased by means of cuttings.

One peculiarity of the Viburnums ought to be noted, which is the production of two kinds of flowers on the one inflorescence. First there are the neuter or sterile ones, usually with stamens and pistil absent, always much the larger and more showy, and placed at the outside of the inflorescence; then there are the perfect flowers, which are always smaller, and which fill the centre of the inflorescence. Some Viburnums (the *Laurustinus*, for instance) have none but perfect flowers; others, like the common *Guedres Rose*, have both kinds; whilst a third group, including *V. macrocephalum* and *plicatum*, have none but sterile flowers. These last, of course, never occur in nature, and are the products of cultivation alone.

V. MACROCEPHALUM.

The illustration (see Supplement) depicts a very good specimen of this fine Viburnum. It also shows the sort of position it requires, in the neighbourhood of London at least, to

bring out its best qualities. I have never seen it really well in flower when grown in the open away from a wall; it is hardly enough to withstand all but our very hardest winters in such a position, but does not ripen sufficiently to flower well. That it is worth a little honouring is shown by Mr. Russell's plant (see Supplementary Illustration). It bears large, rounded, or pyramidal trusses 5 or 6 inches across and high, the single flower being 1 to 1½ inch in diameter, and pure white. Like the "Snowball Tree" and *V. plicatum*, it is a form with wholly sterile flowers. The species from which it was derived is known as *V. Keteleeri*, and is a much less showy plant of later introduction. Fortune first found *V. macrocephalum* in Shanghai, and sent it to the Horticultural Society in 1811. It had, no doubt, long been cultivated in Chinese gardens, for he saw specimens 20 feet high in Chusan. In recent years it has become very popular as a pot plant for greenhouses. [Mr. Russell's plant has been for thirty years in its present spot, is from 6 to 7 ft. high, and this season it bore 170 trusses of bloom. Ed.]

V. CASSINOIDES.

This is a distinct and handsome North American species, remarkable for its thick glossy leaves, 3 or 4 inches long. Its flowers are yellowish-white, and produced in flat clusters 4 to 5 inches across. The fruits also are remarkable in that they turn first rose-coloured, then blue-black. The shrub does not get to be very large in this country, growing perhaps some 5 or 6 feet high. *V. nudum* is a nearly allied species, also North American, and with very dark blue fruits.

V. DENTATUM (THE ARROW-WOOD) AND V. MOLLE.

OF THE North American species, this has proved to be perhaps the best in this country. It grows vigorously, and makes a handsome rounded bush. The leaves are well marked by their strong, straight veins, and regular, coarse teeth, and are smooth and shining on the upper surface. The flowers appear in clusters, 4 inches across, and are white, being followed by handsome dark blue fruits. These fruits however, unfortunately, often fail to set freely in Britain. *V. molle* is a very near ally of *V. dentatum*, but has a more southern habitat, and is distinguished by its pubescent leaves, and by its larger, and also dark blue fruits.

V. DILATATUM.

It is as a beautiful fruit-bearing plant, more than as a flowering one, that this species is likely to prove of value. In Japan, its native country, it bears clusters of berries which, when ripe, are of a beautiful red tint. In the United States also, it has, according to American writers, proved to be the handsomest of the fruit-bearing species. It forms a spreading bush, with coarsely toothed leaves, and produces large cymes of white flowers, all small and fertile. It flowered with Messrs. Veitch at Coombe Wood as far back as 1875, and was described in the *Gardeners' Chronicle* in the vol. for 1848, p. 475.

V. LANTANA (WAYFARING TREE).

A native of Britain, from Yorkshire southwards, this species is also found in slightly varying forms over Europe, North Africa, the Himalaya, and other parts of Northern Asia. It is one of the most vigorous of Viburnums, being sometimes 20 feet high, and tree-like in habit. Although not so ornamental as some of the best species, it is very handsome in its foliage, flowers, and fruits. The leaves are very downy, rough, and 3 to 4 inches long; in



FIG. 100.—VIBURNUM PLICATUM. (SEE P. 322.)

autumn they frequently turn to a rich red before falling. The white flowers are borne on large flat cymes; they are all of the small perfect kind. The fruits finally turn black, but are red at the first.

VIBERNUM OPULUS (GUELDRES ROSE).

In its typical form, this species (which, like the preceding, is a native of Britain) is chiefly valued for the rich colouring of its leaves in autumn, and for its handsome clusters of red, translucent berries. The flowers, too, are pretty, but in this respect it has to give place to its sterile form (*V. Opulus sterile*, commonly known as the Snowball-tree. This, with its terminal rounded cymes of pure white flowers, all infertile, is one of the most useful and common of hardy shrubs. It will grow 10 or 12 feet high, and as much in diameter. The yellow-fruited variety is similar to the type in all respects excepting the fruit, which, instead of being red is yellow. A curious dwarf variety, *nanum*, grows only 2 feet high, and forms a close, neat bush, but it rarely flowers.

V. Plicatum.

As a hardy flowering shrub this *Viburnum* (which is not a true species, but a sterile form of *V. tomentosum*) is the best in the genus. It is quite hardy, as Robt. Fortune suggested it would be when he introduced it from Japan half a century ago; but the fact did not become generally known till within recent years. It deserves to be one of the most popular of deciduous shrubs. In habit it is graceful but compact, sending out each year long but sturdy growths, most frequently in a horizontal direction. From the upper side of these growths it bears during the following May and June a pair of flower-trusses at each joint. As each truss is 3 inches or more across, and frequently more than a dozen of them are borne on a single shoot, a well-flowered specimen is almost hidden by its own blossoms. The flowers are pure white, and wholly sterile; the leaves are dark green, rather plaited, broadly ovate, and 3 or 4 ins. long (see fig. 100).

V. PRUNIFOLIUM (BLACK HAW).

In its native state this species is frequently tree-like in habit, and as much as 20 ft. high. It has handsome, finely-toothed leaves, more *Prunus* than *Prunus*-like, which turn red or purple in autumn; it bears its white flowers in cymose clusters, 3 inches across, and its fruits are blue-black, and covered with a glaucous bloom. Even in this country it shows a tendency to assume a tree-like shape by becoming bare towards the ground, and forming a single stem.

V. TINUS (THE LAURUSTINUS).

In those parts of Britain where it is hardy—and that includes all the southern counties, and the more favoured districts of the north and west—the *Laurustinus* is one of the most useful of evergreens. There are several other *Viburnums* that are evergreen, but none so hardy or so valuable as this one. It produces its white flowers freely after a warm summer, especially in positions fully exposed to the sun. The time of flowering varies, but sometimes it is already in bloom before Christmas, and keeps on till March. The dark, lustrous green of its leaves is always pleasing, but especially so in the variety *lucidum*, which has larger, broader, more shining leaves, and larger flower clusters. A variety that is hairy on the leaves and young branches is called *hirtum*. There are also purple and variegated varieties. The largest specimens I have noted about London are 8 feet or so high, and more in diameter. W. J. B.

The Week's Work.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

What Plant.—There is now such a variety and wealth of trees and shrubs for ornamental planting to be obtained from the nurseryman, that it is an easy matter to improve and add to the beauty of a place at a moderate cost. There are now grown as standards flowering trees that were scarcely obtainable some few years since, but a demand has now arisen for them. In planting these standard trees, whether grown for their flowers or for their foliage, they should be afforded ample space for development. They are admirable subjects for planting on grass, and sparingly in inferior or at prominent points of lobes or edges of shrubberies. Among trees of this kind having variegated foliage are the white and yellow forms of *Acer Negundo*. Sometimes these plants are objected to because they lose their leaves early in the autumn, which does occur in light soils, but not in heavy ones. A companion small tree is *Prunus Pissardi*, beautiful when in flower, and having a distinct shade of leaf colour.

Seasonable work.—At this season the planting of shrubs, the improvement of shrubberies, and alterations in the garden, may receive attention, and the earlier within reason the better. Hollies among evergreens are better when transplanted in April and May, but almost every other species of shrub may be safely removed at the present season, the warmth of the soil favouring rooting. With the cessation of lawn-mowing, the garden staff can be usefully employed in planting and carrying out needful alterations and ground work. If there are shrubs and trees to be removed from one part of the garden to another, these should be moved forthwith if the ground is ready for their reception. If the plants have to be purchased, a visit to the nursery should be made without delay, and the required number selected. Shrubberies and pleasure grounds are often well-planned and properly planted, but in many instances they are improperly managed in after years, owing to change of ownership, change of gardeners, or inability on the part of those in charge to carry out the original intentions, and a fear of removing too much in thinning out later. Most country gardens have some distinctive features in planting and laying out, which is quite as it should be, as thus too much similarity is avoided, and greater charm and attractiveness afforded. Some possessors of a garden prefer the shrubs to be planted thickly, in order to cover the surface, and get immediate effect; others favour thin planting. Close planting requires more attention being paid to transplanting, praning of rampant growers, and cutting out of nurse plants after the first few years succeeding the planting. Thin planting shows off the characteristics of each plant from the first, and is really preferable to the other; the surface of the ground being covered in that case by planting some low-growing shrubs, which may be removed or allowed to remain in the course of time. In planting shrubberies, flowering deciduous shrubs and half-trees should find a place in due proportion; and to furnish a summer and autumn display, flowering perennial, biennial, and annual plants.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Inverliefden, Peeblesshire.

Late Grapes.—During the month of November, very many Grapes are usually spoiled because, the weather being so very enfeebled, it is difficult to maintain an equable house-temperature. On bright days, fire-heat ought to be freely used, and both front and top air admitted, closing the houses, with the exception of a few inches left open at the top, not later than 4 P.M. During the nights, and on dull, foggy, or wet days, when very little air should be admitted, keep the hot-water pipes only moderately warm, and the tempera-

ture not exceeding 50°, or falling much below 45°. When possible, the houses ought to be used exclusively for the Grapes, and keep the atmosphere as dry as possible. If the viney contains pot-plants that must be watered, let this be carefully done in early morning on fine, clear days. It does not follow that the borders should be kept very dry, for next season's crop must be studied; therefore give the borders a good soaking of soft rain-water whenever they approach dryness, doing this important work in the mornings, when the houses can be ventilated freely. Those who have a dread of losing berries by damping, consequent upon watering the borders, may follow the latter operation with a surfacing of clean straw, thus greatly checking evaporation of moisture. Collect the falling leaves daily, and keep a very close look-out for decaying berries; the timely removal of one of which frequently saves a whole bunch. It is now when the value of freely thinned bunches becomes most apparent, as these invariably keep better than the larger, more solid clusters. Gros Maroc and Alnwick Seedling are among the worst keepers, and these should be used first, following with Gros Colman, Alicante, Muscat of Alexandria, and Trebbiano. Mrs. Puceat's Muscat, Lady Downes, and Mrs. Pearson keep very late, the two former being good in May and the others till March and April. In every case much depends upon whether the varieties were thoroughly well ripened or not, and upon the care given to the fruit.

Bottling Grapes.—It is in many cases much too early to begin cutting and bottling the bulk of late Grapes; the proper time for doing this being when the leaves have all fallen, and pruning and resting time are near at hand. When, however, any late Grapes are grown in the earlier house, to keep the bunches on the vines entails the expenditure of extra fire-heat, and the necessity of keeping the house dry. Being thoroughly well ripened, there is no good reason why the bunches should not be cut and bottled at once. A short, thick, pint bottle, with a rather wide mouth, suspended from a rack made for the purpose in a cool and preferably dark room is best. Almost fill the bottles with clear water, cut the bunches with a good length of wood attached, and trim off the shoots so that they may be slipped into the bottle of water. The weight of the bunch ought to be sufficient to give the desired slope to the bottle, the former swinging clear of the latter. No water should be allowed to trickle down into the bunch. If preferred, bottles may be fixed in racks with their necks out clear, and zinc tubes in the form of the letter V suspended to a rack answer, these holding two bunches opposite each other. It is not at all necessary to place charcoal or any other substances in the clear water used, nor for changing the latter at any time. Keep the atmosphere of the room close, dry, and cool, extremes of temperature being guarded against, as also currents of either dry or moist air. The admittance of warm air through a window, ventilator, or door, directly after a spell of cold weather is a sure way of inviting decay in the berries. Examine the bunches frequently for any single decaying berries they may contain.

THE KITCHEN GARDEN.

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

Leeks.—If plants in trenches appear small in size, afford them a sprinkling of artificial manure, keeping it at the base of the plants. Choose a dry day to add more soil around the stems to further blanch them.

Turnips.—Roots that are fully grown may be lifted and stored similarly to Carrots. The later sowings should not be disturbed at present.

Artichokes.—Cut down the stalks of these as soon as they have withered, and as the tubers keep much better in the ground until required for use, a mulch 3 or 4 inches in depth of partly decayed leaf-soil should be afforded as a protection against frost. Lift part of the crop when severe weather is anticipated.

Lettuce.—Fill up any vacancies that occur in lines set out for spring use, and stir the soil between same every few weeks. Keep a sharp look-out for slugs. Further plantings in a sheltered border may be made if necessary.

Radishes may still be sown thinly under frames. Afford them abundance of ventilation as soon as the plants appear. Under good treatment, they should produce useful roots early in the new year.

Mustard and Cress require a temperature of about 60, and should be sown weekly in boxes containing leaf-mould. Keep the mear to the glass when the seed has germinated.

Cabbage.—To afford a succession to the earliest varieties, some plants should be set out without delay, not omitting a few of the red for pickling. Examine those planted a month or so ago for slugs, and if any be found, place some Lettuce-leaves on the ground as a bait, which search in the early morning, and drop the slugs into a box containing freshly slacked lime.

Endive.—The top or cover with tiles or flower-pots each week a certain number to blanch. This work should be done when the plants are dry.

Hotbeds.—Where these are the means for forcing Asparagus, Sea-kale, &c., the beds should be put together as soon as the necessary quantity of freshly fallen Oak and Beech-leaves can be obtained, using three parts of these to one of partly decayed, and some fresh stable-litter. A position nearly due south should be chosen for the bed, which should be about 1 ft. deep at the back, and 3 ft. at the front; making the bed 18 ins. larger all round than the frame upon which to put linings when necessary. Well tread the materials as work proceeds, using long strawy litter for the outside, thus keeping the bed together better than when leaves or short manure are used. When the bed is finished, place boards 6 inches wide at each corner for the frame to rest on, and inside the box a layer a few inches deep of short manure or leaves, so as to bring the bed up to the desired height. Place a couple of test-sticks in here. Within a week or ten days the beds should be fit to receive the roots, of which I shall speak next week.

THE HARDY FRUIT GARDEN.

By C. HENRY.

Peaches and Nectarines.—In most gardens, young trees are bought annually in large or small numbers, according to demand, and planted against warm walls where spaces exist, and a certain rearrangement of those already planted is carried out at the present date. With a view to keeping the walls properly furnished with healthy fruiting trees, it is advisable to remove a few of the oldest or the least fruitful trees yearly, and thus rejuvenate the wall and provide numbers of trees in a healthy, fruitful condition with scarcely any loss of crop. Young trees, or those under 15 years old, produce the finest fruits, and are usually under ordinary care vigorous and healthy. Wherever the spaces between the trees in bearing give sufficient width and height, trees may be planted temporarily for use in the forcing-houses, or on the open wall. Such young trees may be safely removed early in the autumn, and they are in a better condition, so far as the roots are concerned, than those bought from a nursery. Maiden, or dwarf-trained nursery trees when properly planted in these temporary positions will, either in the first or second year be readily transplanted to a permanent one, and the act of transplanting prove a check to over-stem growth, and a means of obtaining a fruitful habit. In selecting trees in a nursery, the bark of the stocks upon which the trees are worked should be smooth, glossy, and growth vigorous, and no trees taken that have been much cut back. The best trees are those with five or six main shoots, that is, those two years old, from the bud. Both Peaches and Nectarines require a fairly warm position on walls, excepting a few of the early ripening varieties, and the land should be well drained; and when a tree must be planted on the site of one re-

moved, the soil should be trenched from 1 to 2 feet in depth, and every particle of the roots of the previous tree removed, as well as a considerable portion of the soil, new loam being mixed with the remainder, together with a small quantity of lime-rubble, charred garden refuse, and wood-ashes, all of which should be well mixed together. In retentive subsoils, although well drained, a layer of brickbats or similar drainage materials, 6 to 8 inches deep, should be placed under the tree station at a depth of 2 feet, and covered with turf, the grassy side turned downwards; or falling these, a layer of coal-ashes. In southern counties, walls with a south, west, or east aspect may be planted with Peaches and Nectarines; in colder localities, a south or south-west aspect only should be used. In the warmer counties, standard trees of such early varieties as Waterloo, Alexander, and Amandine June Peaches, Early Rivers and Lord Napier Nectarines, may be grown, these carrying a crop of fair-sized fruits with tolerable certainty if the spring weather be favourable to the setting of the blossoms and early development of the fruits.

THE ORCHID HOUSES.

By H. J. CHRYSMAN, Gardener to R. L. MEASURES, Esq., Cambridge Lodge, Foston Road, Camberwell.

The Cattleyaceae.—This structure is now gay with the flowers of *C. labiata* autumnalis, *C. Dowiana* aurea, *C. Bowringiana*, and autumn-flowering hybrids. Those hybrids that have been derived from *C. Bowringiana* prove very useful in the autumn, as they gain in strength. Not only do they possess flower as freely as *C. Bowringiana*, but the individual flowers are larger, as might be anticipated from the influence of the larger flowering species from which they are derived. Some of the most popular are *C. Mantini* (*Bowringiana* aurea), *C. Mrs. W. J. Whiteley* (*Bowringiana* Fræseriana), *C. Portia* (*Bowringiana* labiata) L.C., *C. Parysatis* (*Bowringiana* pumila), and *C. Chloris* (maxima *Bowringiana*). There are others of this section equally worthy of cultivation, but they are not at the present time so easily to be procured. Like *C. Bowringiana*, they are very subject to suffer from damp at the base when grown in humid houses, and they should be closely observed till growth has matured. When the outer skin which covers the base of the pseudo-bulbs dries up and comes off, and the latter hardens, then with ordinary care they are easy subjects with which to deal. This class of hybrids usually commence to make roots as soon as flowering is over; and when the new roots are observed, repotting may be carried out if necessary. After repotting a plant, afford it such conditions as will assist re-establishment, and do not afford too much water, but let the compost first become thoroughly dry, and then apply as much as will wet the materials thoroughly. Such hybrids as *Laelia Latona*, *Laelia Cattleya Hippolyta*, and others of the section, having *Laelia cinnabarina* as one of the parents, which have not finished growing, should be suspended in the warmer part of the house where the amount of sunshine is greatest. Plants whose growth is matured should be suspended in a cool, light position, and only as much water applied to them to keep the pseudo-bulbs normally plump. The kind of rest afforded these hybrids has much influence on their flowering, for when the period of rest is prolonged, the flowers expand at a season when the weather is favourable to the production of the beautiful tints which these crosses possess; moreover, the plants commence to grow forthwith vigorously, and are matured at the brightest season of the year.

Oncidium Forbesii is a most attractive Orchid, and flowering in the autumn it is more than usually useful. Unfortunately, like other *Oncidiums*, its strength is exhausted by its freedom to flower, and a plant will decline year by year. I have no doubt whatever that the long period of time that the flowers last acts detrimentally on the plants, for if the flower-scapes are removed

shortly after expanding, as is done where the flowers are grown for market, the plants retain their normal vigour for a much longer period of time than is contrarily the case. The same remarks apply to *O. crispum*, *O. prectatum*, *O. varicosum*, *O. Marshallianum*, &c. If kept in the house after they have been cut, placed in water-changed frequently, the flowers last for a considerable time in perfection.

PLANTS UNDER GLASS.

By D. ROBERT, Gardener to HESSLEY PARK, Esq., Fleetwood Hall, Loughborough.

The Conservatory. During the present month and December the house can be kept gay with *Chrysanthemums*, and in order to give a finish to the groups of large plants, single-flowered and Pompon *Chrysanthemums* should be employed. For vases and flower-glasses the single-flowered varieties are general favourites, and should be more commonly grown than is the case generally. The system of placing the *Chrysanthemums* in groups on the ground is that now generally adopted, and it probably affords the most convenient method of dealing with taller growers, but the arrangement of the colours has to be considered also. A distinctive feature can be obtained by grouping shades of yellow in proximity to bronzy-reds, &c., and pinks or mauve with lighter shades, and white single varieties and Pompons intermixed with *Salvia splendens* in the front of the groups. The foregoing, together with zonal *Pelargoniums*, sweet-scented *Pelargoniums*, *Primula stollata* and others, and *Mignonne* will usually suffice to render a conservatory gay. Let all wall climbers, as *Hedera*, *Pelargoniums*, *Colera scandens*, *Polygala*, &c., be tied in, and a temperature of 50 at night, and 55 to 60 be maintained, mild fire-heat being afforded in dull weather. Apply ample ventilation by the front ventilators on fine dry days, and at nights a small amount may be given in mild weather, together with a little warmth in the pipes. No flowers are easier to injure by damp than *Chrysanthemums*, and unless fire-heat and almost constant ventilation be applied, it is impossible to maintain them in a presentable state at this season. The rearrangement of the conservatory being finished, space must be found for the late-flowering *Chrysanthemums*, *Fuchsias*, &c., which are still out-doors under protection at night.

Forcing.—Bring into heat those plants of *Azalea indica*, *A. l. alba*, *amea*, *Caldwelli* Deutsche Perle, Fielder's White, and the old *purpurea* (a most useful colour), which have the most prominent flower-buds; also plants of *Azalea mollis*, *Deutzia gracilis*, and well-rooted potsful of Paper-white *Narcissus*, Roman *Hyacinths*, *Lilium longiflorum Harrisii*, and retarded *Lily of the Valley*. The more forward *Cytisus* may also be brought into heat, and forced gently into flower. Maintain a temperature of 50 to 55 at night, and 5° higher by day. The daily syringing of the plants must be carried out in the early morning, and about 3 P.M., the paths, walls, &c., being wetted in the evening with a fine rose watering-can.

THE SOCIETY FOR THE PROTECTION OF BIRDS

Is this year offering two prizes, of £10 and £5 respectively, for papers on the best means of establishing a "Bird and Arbour Day" in England. In the schools of many of the United States, bird days and arbour days have become a very popular institution, and have proved most successful in interesting teachers and children in birds and bird-protection; and the Society's offer will, it is hoped, elicit practical hints as to the way in which the scheme may be introduced and worked in English schools. Papers are to be sent in not later than November 30, 1901, and all particulars may be obtained of the Hon. Secretary, Society for the Protection of Birds, 3, Hanover Square, London, W. The essays on bird protection which gained the Society's prizes last year can also be had from the Society's office.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR NOVEMBER.

TUESDAY, Nov. 5	National Chrysanthemum Society's Autumn Exhibition at Royal Aquarium, Westminster (3 days). Chrysanthemum Shows at Plymouth, Southampton, Cardiff, and Kingston all 2 days.
WEDNESDAY, Nov. 6	Chrysanthemum Show at Evening, also at Stoke Newington (Devonshire Square Church School Room), Bromley, Hauxley (Stalls), Eastbourne, and Ascot all 2 days.
THURSDAY, Nov. 7	Chrysanthemum and Fruit Shows at Highgate (2 days), and Colchester, Winchester (2 days), Stratford-on-Avon (2 days), Bury St Edmunds (2 days).
FRIDAY, Nov. 8	Chrysanthemum and Fruit Shows at Leicester (2 days), Eecles (2 days), Macclesfield (2 days), Huddersfield (2 days).
SUNDAY, Nov. 10	Great Chrysanthemum Exhibition (3 days).
TUESDAY, Nov. 12	Royal Horticultural Society's Committee Meetings; Chrysanthemum and Fruit Shows at Chester (2 days), Birmingham (3 days), Belfast (2 days), Ipswich (2 days), Dulwich (2 days), Leeds (2 days), Brighton (2 days), Devizes.
WEDNESDAY, Nov. 13	Chrysanthemum and Fruit Shows at Bristol, Chesterfield, Ashgate, and Liverpool (two days), also at York, and Hill (both three days), and Buxton (one day), Bourne-mouth (two days).
THURSDAY, Nov. 14	Chrysanthemum and Fruit Shows at Edinburgh, Stockport, and Manchester (three days); also at Exeter (two days).
FRIDAY, Nov. 15	Bradford Chrysanthemum Show (two days).
SATURDAY, Nov. 16	Chrysanthemum Exhibition at Antwerp (three days).
THURSDAY, Nov. 21	Norfolk and Norwich Horticultural Society's Chrysanthemum Show (three days).
FRIDAY, Nov. 22	Aberdeen Chrysanthemum Show (two days).
TUESDAY, Nov. 26	Royal Horticultural Society's Committee meet.
THURSDAY, Nov. 28	Société Nationale d'Horticulture de France (Fruit Show).

SALES FOR THE WEEK.

EVERY DAY EXCEPT SATURDAY.—	Dutch Bulbs, at Protheroe & Morris' Rooms—Daily at 10 o'clock.
MONDAY, Nov. 1.—	Nursery Stock at the Cambridge Nursery, Cooksbridge, near Lewes, by Protheroe & Morris, at 12 o'clock.—Bulbs, Azaleas, Dwarf Japanese Shrubs, at Stevens' Rooms.
TUESDAY, Nov. 5.—	Great Annual Sale of Nursery Stock at the Hale Farm Nurseries, Felling, by Protheroe & Morris, at 11 a.m.—Miscellaneous Shrubs, Pollenien & Co.
WEDNESDAY, Nov. 6.—	Nursery Stock at The Grove Park Nurseries, Grove Park, S.E., by Protheroe & Morris, at 12 o'clock.—Bulbs, Azaleas, Palms, and Japanese Shrubs, at Stevens' Rooms.—Roses, Azaleas, Palms, Ferns, &c., by Protheroe & Morris, at 12 o'clock.
THURSDAY, Nov. 7.—	Nursery Stock, Wood Lane Nursery, Is-jeworth, by Protheroe & Morris, at 12 o'clock.—Palms &c., by Pollenien & Co.
FRIDAY, Nov. 8.—	Orchids in large variety, by Protheroe & Morris, at 6 & 8, Chesepide, at 12.30.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Cliviswick—41.8.

ACTUAL TEMPERATURES.—

LONDON.—October 30 (6 P.M.): Max. 57; Min. 45.
October 31.—Fine; strong east wind.
PROVINCES.—October 30 (6 P.M.): Max. 55; Seilly, Min. 47; Sheffield.

The Prodn. THE apparently accidental production of double duction of double flowers on Flowers. plants whose blossoms are usually single, has been for long a difficult problem to botanists, who have endeavoured to account for the phenomenon by ingenious and widely-differing theories.

One of the most recent explanations, offered by M. MARIE MOLLARD, is that the production of double flowers is brought about by the action of insects, or of parasitic fungoid growths; the former affecting the tissues by repeated punctures, and the fungi actually living upon those tissues.

Thus, flowers of *Knantia arvensis*, when attacked by *Peronospora violacea*, those of *Matricaria inodora* invaded by *P. Radii*, present the appearance of the double flowers of radiate Composites; and, similarly, under the influence of *Puccinia violæ*, the blooms of *Viola silvatica* produce petaloid stamens. Many Umbelliferous and Cruciferous plants, attacked by Hemipterous insects exhibit a virescence or leaf-like condition of all the floral organs that is not without analogy with the facts of horticultural botany.

So far modifications due to parasitism exercised directly on the floral organs have been compared to the modifications induced in cultivated plants, but these analogous effects have not previously been traced to the same cause. A number of observations and experiments have convinced M. MOLLARD that many if not all the double "florist's flowers" result solely from parasitic association where the disappearance of the stamens is accompanied by the phenomena of virescence, petaloid sexual organs, proliferation, &c.

Further, two cases of petaloid of the reproductive organs produced naturally have been observed, which are plainly due to parasites, which in this instance do not act directly upon the flower, but living upon the root-organs, bring about sterility of the flower, and the structural modifications that accompany that phenomenon.

The experimenter observed that, in some cases of mono-styly, there are no parasites on the aerial parts of the plants, but the roots are infested with the mycelium of a Dematiaceæ, which is not found on any plant bearing normal flowers. In another double-flowered plant (*Scabiosa columbaria*), galls of *Heterodera radicleola* (eel-worm) were found on the roots, but none on the roots of the normal plants.

To test the theory as to the cause of the peculiarity, a normal plant was placed in a space left by uprooting a malformed specimen, and the former afterwards presented the same modifications in its flowers as did the abnormal plant, and galls made by the *Heterodera* appeared on its roots.

The next question to be considered is whether parasitic fungi induce the formation of double flowers; and experiments to resolve this were made with *Saponaria officinalis*.

The habit of the double *Saponaria* is quite different from that of the single-flowered variety; the stem has shorter internodes, the nodes are more enlarged, and much resembling the stem of specimens attacked by *Sorosporium Saponariae*; the rhizome is thicker, and its structure differs; lignification particularly is less marked, and the rhizome shows slight tuberculation. These characteristics agree with the hypothesis of parasitic association.

Rhizomes of normal *Saponaria* are free from mycelium, or, in sterilized water, show but a feeble development of it; but double-flowered specimens grown under identical conditions always yield in abundance a *Fusarium* which proves to be the same whatever the origin of the specimen examined.

M. MOLLARD is therefore led to conclude that certain plants with double flowers are affected by parasitic contact acting upon the underground organs of these plants, and it is an easily drawn inference that cultivation produces, if it does not actively provoke the condition and increase of this contact which has been accidentally effected in nature.

Such, at any rate, are the conclusions arrived at by this observer in a recent number of the *Comptes Rendus*, p. 518. Whether they can be borne out by further examination remains to be seen. At present it would seem that if the action of the parasite, vegetable or animal, can in some cases be traced, no such influence can be detected in the majority of double flowers. Eelworms at the root, and fungus in the tissues, do indeed sometimes set up hypertrophy, but it is certain that many plants infested with these parasites do not produce double flowers, and, on the other hand, most plants with double flowers show no trace of parasites. In any case, here is a promising field of observation and research, the results of which would have practical value.

THE DAHLIA SOCIETY.—At a meeting of this Society held on Tuesday, it was agreed to recommend to the Fellows that a two days' show be held in the Drill Hall next September. On the first day the show would be held in connection with the meeting of the Royal Horticultural Society up till 5 P.M., after which hour up till 10 P.M., as well as during the whole of the following day, the show would be held under the auspices of the Dahlia Society only.

MR. PETER BARR.—This tireless traveller was recently heard of at Cape Town, where at a meeting of the Sea Point Horticultural Society, he gave an exhaustive paper entitled, "Ancient and Modern Daffodils," and informed his audience by what means the people of New South Wales, notably Mr. BRADLEY in Sydney, overcame the baleful influences of a burning sun on the raising of new varieties from seed, viz., by growing the plants in bush, i.e., chick-house made of laths, and thinly covered with small branches of the Tea-tree, a very abundant scrub. He thought that some such erection might have a value in the Cape Colony.

THE ANNUAL DINNER of the National Chrysanthemum Society will take place on Wednesday, November 27, at the Holborn Restaurant, at 6.15 P.M. The new President of the Society, Sir A. K. ROLLER, M.P., will preside; and the Challenge Trophy, Holmes' Memorial, and other Cups and Medals will be presented to the winners during the evening. The presence of ladies is particularly invited.

THE FRUITS OF THE STRAWBERRY-TREE.—We do not remember to have seen fruits of *Arbutus Unedo* in Covent Garden Market until the present week, when a sample was received from France by one of the best known salesmen. They came without name, and were not known in the least to the market men. The fruits are very handsome, scarlet

in colour, and thickly covered with short, wedge-shaped spines. They are not disagreeable in flavour, but are somewhat "gritty," and at the best are less pleasing to the palate than the eye.

FLOWERS DEVELOPED IN THE DARK.—The conclusions obtained from M. DEVLAYGUE'S experiments are as follows:—1st. In darkness, flowers are usually later than when in full light. 2nd. The colour of flowers kept principally in the dark shows a diminution of intensity; very slight in some flowers, observable in others, and for yet others tending towards complete decoloration. 3rd. Flowers developed in darkness are generally smaller than those developed in the light, but on the other hand, the pedicels are often more developed. 4th. The weight and volume of flowers developed in the dark, including the pedicels that support them, are always inferior to the weight and volume of these same organs developed in the light; however, in some cases the increase of the dimensions of the pedicels of plants developed in the dark may sufficiently affect this weight and volume to render them greater than in normal flowers. *A. Herbert.*

INFLUENCES OF ATMOSPHERIC ENVIRONMENT ON PLANTS.—In the *Annales Agronomiques*, 1891, p. 383, an account is given of the combined or isolated influences of light, altitude, hygrometric condition, and temperature on the growth of plants, as studied by M. CHARVOT. M. GASTON BONNIER has stated that a plant transported from the plains to a high altitude undergoes a certain number of modifications, which enhance the activity of the leaves, and then increase their power of assimilating. Now, M. CHARVOT, in a great many analyses already made on several hundred specimens of essence of Lavender from different sources, observed that richness in ethers was proportionate to the altitude at which the plant had lived. But the influence of the altitude is attended by various conditions—more intense light, drier air, a lower temperature. The two first conditions, taken singly, act in one way; the last condition has a contrary effect. M. CHARVOT examined the hygrometric influences particularly. M. GASTON BONNIER has shown that plants developed in dry air assimilate more than those developed in saturated air. Analyses of essence of Lavender taken from plants grown in damp and dry seasons respectively, proved that dry air favours the formation of ethers, while it also causes the chlorophyll of plants to be more active. So that it may be said that influences capable of increasing the activity of the chlorophyll at the same time favour the formation of ethers of terpenic alcohols. These observations are of value as regards their application to the manufacture of perfumes.

FAR-OFF RESEMBLANCES.—The term "mimetic," applied to those curious resemblances between plants of widely different nature, is not quite happy, as it implies an act of conscious imitation on the part of the plant which does not exist. Similarity of environment offers a valid explanation in many cases, but it fails to account for them all. Thus, in the temperate-house at Kew may be seen plants of *Melalouca micromera*, the foliage of which requires a second look to distinguish it from that of some forms of *Juniperus virginiana*; while *Bupleurum difforme* has leaves which, on a superficial inspection, resemble those of a *Pinus*!

CLERODENDRON TRICHOTOMUM.—The persistent calyx of this plant, surrounding the globular, black fruit, assumes at this season a rich crimson tint, which is very effective. At

a distance, it might be mistaken for a *Eunonymus*, in which the ripe carpels assume a similar tint, while the aril of the seed is orange-coloured.

"PLUM-COTS."—Under this name are signified the results of a cross between a Plum and an Apricot, raised by Mr. LUTHER BURBANK, in California.

"HOOKER'S ICONES PLANTARUM."—The part issued in September comprises plates 2701 to 2725. The plants figured are mostly of botanical interest, and as such of great importance. *Casalpinia rostrata*, N. E. Br., tab. 2702, is figured from a plant cultivated in the Botanic Garden, Durban. It has bipinnate leaves and rose coloured flowers, one of the sepals larger than the rest, and provided with a prominent spur-like process, which distinguishes it from all known species. *Bretschneidera sinensis*, Hemsley, tab. 2708, is a highly ornamental sapindaceous tree from Yunnan, named in memory of the late Dr. BRETSCHNEIDER, see *Gardeners' Chronicle*, May 4, 1901, p. 291. *Clematis pterantha*, Dunn, tab. 2713, is a species from Yunnan, remarkable for the waxy wings to the sepals. *Scalasia retroflexa*, Hemsley, tab. 2715, a Composite from the Galapagos Islands, with crispato-pinnatifid leaves like those of a Scotch Kale. The three following plates refer to other species of the same genus, collected by CHARLES DARWIN in the Galapagos in 1835, and are of special interest from the point of view of botanical geography. *Hazardia detonsa*, tab. 2720, has been previously figured in the *Gardeners' Chronicle* from specimens grown by W. E. GIBBLETON, Esq., p. 179, vol. xviii., 1900.

ASTER AMELLUS.—Among the varieties of this plant (see ante, p. 300), we may mention one called *River-Sea*, in which the flowers are 2 inches across, and of a deep violet colour. W. Cox has even larger flower-heads, of a rich lilac.

TASMANIAN APPLES.—At a recent meeting of the American Pomological Society, a well known member, Mr. Powell, in the course of an address said, concerning the Tasmanian Apples: "Tasmania does not produce anything like as good a quality of Apple as is produced in New York State; and yet Tasmania, by her improved system of transportation, can send Apples 11,000 miles, largely over tropical seas, and them in London in better condition than we can, and get a better price."

ROYAL TRADESMEN.—Mr. JOHN K. KING, of Coggeshall, Essex, and Reading, Berks, has been appointed a Royal purveyor. Mr. KING'S business is one of the oldest established in the kingdom, having been founded in 1793.

BACTERIA IN PLANTS.—A recent Bulletin from the United States Department of Agriculture, is devoted to a paper, by Dr. ERWIN F. SMITH, on the cultural characters of *Pseudomonas Hyacinthi*, *P. campestris*, *P. Phaseoli*, and *P. Stewartii* four one-flagellate, yellow bacteria parasitic on plants. The first is the cause of a serious disease of Hyacinths; the second of a widely-distributed and destructive disease of Cabbages, known as brown-rot; the third of a disease of Beans, and the fourth is believed to be the cause of a serious disease of Sweet Corn. The bulletin also contains occasional references to *Bacillus amylovorus*, *B. coli*, and other bacterial organisms, which were used for comparison. It is the first exhaustive working over of an interesting group of plant parasites, concerning which practically nothing was known in 1896, when Dr. SMITH began his studies. The work de-

scribed is of a purely technical nature, but will be valuable to those in experiment stations and elsewhere who are engaged in investigating the bacterial diseases of plants.

NURSERYMEN'S NAMES.—An English author, says *Meacham's Magazine*, laments that the nurserymen of his country still doggedly continue to use the botanical names employed by DOX, LOUBOX and others, though it has been clearly shown that there are other names which, under the "rules of priority," ought to have been adopted by these well-known writers. But surely the English nurserymen may plead for mercy as against justice in a case like this. The nurseryman should not suffer because a good man went wrong. The names of DOX and LOUBOX have entered into the commerce of the world, and to change his catalogue names annually, however justly it may be proved he should do under botanical rules, would drive the nurseryman's business to endless confusion. There would be as much difficulty in filling orders as he now finds under the numerous common names. Now he is under continual reproach. "You have sent me the dog-flower instead of the cat-plant I ordered," writes one; and another declares, "Instead of the 'Blue as Blazes,' I received the 'Devil in the Bush.'" He finds botanical names his only safety. We can all admire the heroism of the man who can stand still and have his head knocked off "because it was so nominated in bond." Even SHYLOCK had to admit that his pound of flesh must go. So all of us grant that the "law of priority" ought to prevail in plant names; but in view of the inevitable confusion that must arise from its enforcement, we can only hope that some botanical PORTIA will turn up in time, so that the poor nurseryman may not lose his "blood" as well as his "flesh" by the changes, "National Nurseryman."

THE WOBURN EXPERIMENTAL FRUIT FARM.—In the pavilion at this establishment, the tenants on the Duke of BEDFORD'S estate and other residents in the county, have an opportunity of inspecting a collection of 150 varieties of Apples and Pears, which are set out to illustrate the chief characters of the respective sorts, and their suitability to the district. In addition, examples are shown of the methods of grading and packing adopted. The manager, Mr. R. LEWIS CASTLE, is in attendance to furnish visitors with any information required respecting the fruits shown, and upon fruit culture generally in the county.

OCTOBER RASPBERRIES.—Strawberries and one or two other soft fruits have here and there been showing late crops of reported excellent quality; a few days since a dish of splendid Raspberries were picked in a cottage garden in Iltingford. It was remarked that these fruits were superior in quality to those harvested at the "proper" time. (See also p. 320, col. 2.)

THE ARCHBISHOP'S PARK, LAMBETH.—Under an agreement with Dr. TEMPLE, Archbishop of Canterbury, the field adjacent to Lambeth Palace, long used by the volunteers of the district, has been laid out by the London County Council as a recreation ground, and was formally handed over to the Council on Thursday last by the Archbishop. The Council have expended nearly £5000 on the work, and the place is already a favourite.

SWEET PEAS.—In the *Gardeners' Chronicle* of September 28 there appeared a note on Sweet Peas specially referring to a communication from the Rev. W. T. HUTCHINS, of Springfield, Mass., deploring the decadence of the Sweet Pea in America. It was stated that "some say the mischief is due to growing in

the eastern States seeds grown under the very different climatic conditions of California." After reading this, I wrote to Mr. HITCHINS on September 28, offering to send him a little Sweet Pea seed (1) saved in Kent, (2) saved in Essex, (3) saved in Scotland; so that he might be able to observe and compare results with plants grown from Californian seed. I am today (October 24) in receipt of Mr. HITCHINS' reply, which I do not think it will be any breach of courtesy to quote.

122, Wintonhoe street, Springfield, Mass., October 14, 1901.

My Dear Mr. Cuthbertson,—Your letter of Sept. 28 is very welcome. I keep you and Mr. Dean in sight as a happy memento of the Crystal Palace Show of 1900. I was not expecting that our Sweet Pea discussion would reach so far. Indeed, I was reluctantly drawn into it, and then found myself shored to the front, a sort of loudly about the whole trouble that I am a sort of mourner at the funeral, and wish somebody else would officiate. I feel more like condoling with all parties, for everyone has tried hard to hold the flower up to its best. Your offer is very kind, and I can be of some use to you. Just now I cannot grow any Sweet Peas, but will see that your seed is placed where it will have the best treatment, and will report to you. I am hoping to enjoy yet more years of devotion to this flower, and trust I may be among those who shall celebrate its full return to successful popular culture.

W. T. HITCHINS.

I hope the desire expressed by Mr. HITCHINS in the last sentence of his letter will be fully realised. I have observed in several journals this last summer reference made to a so-called disease in Sweet Peas which is said to have appeared in this country, but no such trouble has come under my own observation [ours]. If it appears next year, it should at once form a subject-matter for the most serious attention of the National Sweet Pea Society. It may be that we are importing from California, with the seed which this country now so largely imports, the very form of disease or trouble which is annoying and depressing our Sweet Pea friends in America. *William Cuthbertson, Rothbury.*

INTERNATIONAL AMENITIES.—We quote the following from the *Financial News*:—

"The preliminary steps are being taken for the formation of a league whose members will boycott all Dutch productions, as a retaliation for the proposed boycott of English goods, which, under very high auspices, has been started in Holland. As a first move it is suggested that Dutch bulbs should be refused by English buyers."

Referring to this paragraph, Messrs. J. MURRAY & SONS, of Deptford, write:—

"Respecting your article on the forming of a league to boycott Dutch bulbs, this boycott may cut both ways, as personally we hold freehold land in Holland, and our bulb farms are conducted under residential English managers, and no doubt other English firms are in the same way interested.

Yours respectfully, J. MURRAY & SONS.

Head office; 103, High Street,
Deptford, S.E., October 25."

It is not for us to express any opinion on what our Dutch friends may choose to do; we may safely leave that to their commercial conscience! As for ourselves, any attempt of the kind would be as futile as it would be silly.

THE BOTANIC GARDEN, BRUSSELS.—We learn with great regret that M. CRÉPIN, the eminent Director of this establishment, has resigned his position on the grounds of failing health. Ever since M. CRÉPIN was a Professor in the School of Horticulture at Ghent, when that establishment was connected with Louis VAN HOUTTE'S famous nursery, he has laboured incessantly for the promotion of botany. He is best known in this country for his numerous publications relating to the genus *Rosa*, but these by no means constitute his only claims

to the respect of botanists. Much interest is felt in the appointment of his successor, but there is a strong feeling in scientific circles that the post should be filled by M. DEBAND, one of the conservators of the garden, well known for his *Index to the Genera Plantarum of Benthum and Hooker*, his works on the *Flora of Africa, Costa Rica, &c.*

MR. NICHOLSON.—Some members of the Committees of the Royal Horticultural Society, the Gardeners' Orphan Fund, and other friends of Mr. NICHOLSON, entertained him at a private dinner at the Cannon Street Hotel on Wednesday evening. The proceedings, though devoid of any official character, were marked by the greatest cordiality.

PUBLICATIONS RECEIVED.—*Bulletin of Mesothems Publication, Trinidad, July.* Contents: Marital Value of Shade-trees, Stea Disease of oranges, How some orchards thrive, &c.—*Bulletin of Mesothems Publication, Trinidad, extra number, August.* Contents: Cacao Disease, Correspondence, Reports and Notes, together with reports and correspondence received from D. Morris, Esq., C.M.G., Commissioner of the Imperial Department of Agriculture for the West Indies.—Contributions to the Life-history of Plants, No. XV. *The Bending of Mature Wood in Trees.* By Thomas Meeklin. From the Proceedings of the Academy of Natural Sciences of Philadelphia, June, 1901. *Ilustraciones de las Plantas de la Bahía de San Carlos, Bolívar, Venezuela.* por J. Barbosa Rodriguez, Director do Jardim Botânico do Rio de Janeiro. *Contribuições do Jardim Botânico do Rio de Janeiro.* por seu Director, J. Barbosa Rodriguez. *Palmeiras Hassleriana Novas, encontradas no Paraguy pelo Dr. Emilio Hassler, de 1888-1890, determinadas e desenhadas por J. Barbosa Rodriguez.* Rio de Janeiro. *Contribuições do Jardim Botânico do Rio de Janeiro.* por J. Barbosa Rodriguez. *Palmeiras Uruguayenses Novas vel pouco conhecidas.* 1st volume, No. 2. *Bulletin del Instituto Fisico-quimico de Costa Rica, No. 5.* *La R. Scuola Superiore d'Agricoltura di Padova.* The *Annuario del Giardin di S. South Wales, August.* This number is devoted to reports and to a list of the Society's shows during the year.

A VISIT TO THE NORTH.—IV.

(Continued from p. 305.)

SOME GLASGOW NURSERIES.

I HAD but one day that could be devoted to an inspection of a few nurseries around Glasgow. It was impossible to see them all, and I therefore selected three. Rather early in the morning I took train for the Kennishead Nurseries of—

MESSRS. SMITH & SIMONS,

whose seed shop and offices are in West George Street. Their nurseries adjoin Kennishead Railway Station, and there are 18½ acres of land cropped with nursery stock. The business appears to be wholly retail, and all of the stock has been raised on the place. The bulk of it consists of forest-trees, and particularly of species most called for in the Glasgow district. Those represented by largest quantities were Spruce, of which there were said to be 200,000 young plants; green-leaved Hollies, 1,500 plants; Yews, English and Irish, some 20,000; oval-leaved Privet, common Laurels, and Limes, which succeed fairly well in Glasgow, while Ash is only comparatively successful and Chestnuts are dying in large numbers. In smaller quantities were Silver Birches, 6 feet high; Tree-Ivies in pots, *Aucuba japonica*, shrubby Spiræas, and Rhododendrons, of which there were 100 named varieties, and a lot of two-years-old seedlings, from seed ripened in England, &c. The stocks of Conifers are not very large, but the following sorts are represented among others:—*Pinus Cembra*, *P. Strobus*, *P. austriaca*, and *P. maritima*; a few of the commoner species of Abies, *Cupressus*, *Retinosporas*, and 100 plants, 3 feet high, of the *Umbrella Pine*.

At this and other nurseries I was told that there is a very limited sale indeed in the

West of Scotland for trees and shrubs, except those of the very commonest and hardiest character; and from observations of my own, I think that gardeners in the district are too timid in trying to extend the number of species grown. One sees species getting to a considerable size without injury in the nurseries that are scarcely ever seen outside of them; and there is certainly room for a little more enterprise on the part of gardeners and their employers, even when allowance has been made for the cold climate and rough winds.

A collection of 100 varieties of *Viola* and *Pansies* is grown, and there is a small glass-house, in which Palms are raised from seeds, and a few ornamental foliage plants cultivated.

Leaving this nursery, I walked through Pollockshaws, and entrained for Cathcart, where a walk of ten minutes brought me to the nursery of—

MESSRS. AUSTIN & McASLAN,

where are 40 acres of land under nursery crops. In this nursery also forest trees form the bulk of the stock, and the breadths of seedling Lar-hes were looking very fine. The same may be said of the Spruces, the Norway and black American sorts being capital. There was a large number of Norway Spruce 1 foot high, and regarded as ready for sale for planting hillsides, it being a practice to use very young "stuff" for bleak places in Scotland. Brake after brake was seen of the oval-leaved Privet, and of Scotch Firs a foot high. Poplars, Elms, Beech, Weeping Willows, Ivies in pots, Rhododendron ponticum, and Rhododendron hybrids; also *Aucubas*, Laurels, Conifers of the hardier species and varieties, *Prunus Pissardi*, Hollies, Golden Elders, and many other hardy trees and shrubs are cultivated in large quantities at Cathcart.

A good collection of fruit trees is kept, in which are strongly represented those particular varieties that by long experience have proved exceptionally well suited to withstand the trying climate of Glasgow and the surrounding district. Some of the Apples most often enquired for include Lord Suffield, Ecklinville Seedling, New Hawthorned, Ringer, Lane's Seedling, Prince Albert, and more than any other, *Baillie*, a local variety, also known as East Lothian Seedling.

Most of the Apple-trees are worked on the Paradise stock, and I saw a considerable number of tree-growing espalier or trained trees, in addition to the bush, pyramid, and standard trees. Amongst some of the ornamental Crabs was one known as *Eva Rathke*, with fruits as large as a Ribston Pippin Apple, very red on one side. The tree has a weeping habit, and it is difficult to "get it up."

Messrs. Austin & McAslan have a number of glasshouses, filled with a very miscellaneous collection of plants. Amongst the *Cordylines* (*Dracaenas*) was the little known variety *Ecklanthe*, in the way of *rubra*, but it has longer, more recurring leaves, and was given an Award of Merit by the Royal Horticultural Society on October 11, 1898, when shown by Messrs. Veitch of Chelsea. *C. Sanderiana*, *Phrynium variegatum*, large plants of *Pandanus Veitchii*, *Gloxinias*, *Aralias*, *Codiaeums*, and *Acalypha hispida*, were other species I noticed. The seed shop and offices are at 89, Mitchell Street, Glasgow, and the storage-room was being put to a trial by the arrival of Dutch bulbs—for all bulbs are purchased from Holland, none from English or Irish growers! The firm has a large bulb and seed trade, and possesses good facilities for the handling of them. P.

(To be continued.)



FIG. 101.—WATER-LILIES IN MR. PRITCHARD'S NURSERY, CHRISTCHURCH.

MR. PRITCHARD'S NURSERY,
CHRISTCHURCH.

In our account of the plants in this hardy-plant nursery, which appeared in the *Gardeners' Chronicle* for September 21 of the present year, mention was made of Mr.

Pritchard's method of cultivating Water-Lilies, and our illustration in the present issue (fig. 101) affords an idea of the water-tanks in which the plants are grown. The other view (fig. 102) shows a big *Thistle*, *Onopordum*, and other subjects, arranged as are all of the plants, grown in beds 1 ft. in width.



FIG. 102.—VIEW IN MR. PRITCHARD'S NURSERY, CHRISTCHURCH.

THE LATE REV. H. EWBANK.

By the sudden death of the above-named gentleman, chronicled in your last issue, British horticulture has lost one of the truest and most devoted of its patrons. Only a few days previously, one of his characteristic letters reached me, conveying not the slightest hint or sign of anything amiss, and written in his ever clear expressive way. As a specialist, however, Mr. Ewbank possessed an experience quite unique, and his zeal and enthusiasm found their ideal in the fascinating forms of the *Onocyclylus trises*. Of these plants, of their wants, their likes and dislikes, of the many and varied attempts to provide them with what they most required; of these and kindred things he would never tire, and he was never more horticulturally happy than when in converse with some one like-minded. None more than he strove to find out the exact kind of soil or position that would make these plants more content in our English lowland gardens, not merely that their picturesque flowers may be more generally admired, but in the endeavour to grow them year after year into ever-increasing tufts, the like of which the imagination has but pictured to the present time. Still, it would appear that he was on the very threshold of the realisation of all this, and certainly the experiences of the last year or two gave abundant room for hope; and after much thought, Mr. Ewbank emphatically declared in favour of lime for these particular plants. In what percentage, or in what particular form, or how applied, were matters of detail. "But," he would say, "you may depend upon it, these *Iris*es appreciate lime." So fully convinced was he on the point, that his chief regret was that he had not arrived at these conclusions twenty years sooner." And this is where the chief value of such devoted labour exists, viz., in the steady, faithful work and experience of twenty or thirty years in one garden and locality. Whether such conditions would be generally helpful in other localities or not, one has no knowledge; certainly, one has nothing but admiration for such devoted zeal in the hope of simplifying the cultivation of a somewhat difficult and exacting group of plants. No labour or care was too great where these *Iris*es were concerned, and the lesson such whole-hearted devotion supplies should not be in vain. It is, of course, but a unit in the general cultivation of the group, but it is a unit of unmistakable importance, as it concerns the vigour of these particular plants.

Full to the brim as was the rectory garden at Ryde, and the naturalised home of many a choice plant, these *Iris*es were the plants supreme in its late master's eye, and the visitor must be callous indeed who could not admire his admiration and devotion. And yet ripe and full as was his knowledge, there still remained a longing, a yearning to gather more, and his appeal for "a hint before you leave," is but characteristic of the same.

To some, perhaps, who, having heard of Mr. Ewbank's fame as a gardener, went to Ryde to see a garden, there may have been disappointment; but to those who knew and appreciated choice plants when grown to perfection, there was a garden well stocked, a kindly welcome, and a masterly hand to guide and furnish interesting details.

Of the man, and his devotion to that higher and nobler work in the Church to which he gave the greater part of a long life, there is much in the edifice near by to bear witness of that loyalty and faithfulness that remaineth even unto the end. *E. H. J.*

HOME CORRESPONDENCE.

DOUBLE-FLOWERED PEACHES FRUITING.—

I have noticed the paragraph on p. 262. In the neighbourhood of Melbourne, Victoria, these Peaches bear fruit every year; perhaps the white-flowered variety is the most prolific. The fruit is very small, and as described, greenish-yellow. Some use them for cooking (and occasionally may eat a few), but the flavour being so inferior to that of the recognised market varieties, they are often allowed to decay, or are eaten by birds. During the last few years a type of double-flowering Peach with a weeping habit is becoming popular. They look well when budded, say 8 feet from the ground, on seedlings of the more erect-growing varieties. In the weeping type, which includes several varieties, the flowers are not quite so double. The stones of all the double-flowering varieties when planted will germinate freely, and invariably produce double flowers again. *Thos. W. Pockett, Hatherley Road, Cheltenham (of Australia).*

CAMPANULA RAPUNCULOIDES.—I am very sorry to see Mr. Mott recommending this plant (p. 287). In my garden it is a perfect pest, spreading over an immense space from its Dahlia-like roots, and almost impossible of eradication. It seeds also very freely, and the seed appears to be blown or to be carried to great distances. No Thistle, Dock, or Winter Heliotrope is a worse or more destructive weed, and if I had my way no nurseryman should be allowed to sell it. On remonstrating with one of our leading tradesmen against it being quoted in his catalogue, he told me he had a demand for it for killing grass! R.

PHYSALIS EDULIS OUT-OF-DOORS.—This plant can be grown and fruited out-doors through the summer in the warmer parts of the country. They do very well here (Devonshire), and make large bushes. I sowed the seed in the month of February, and when the plants are large enough pot them in small pots, and shift into larger ones when more root space is wanted. Being plants that make strong growth they are ready for planting out the third week in May. It is better to plant against garden walls, but I have had them on wire fences, and the plants grow just as well as against a wall, but the fruit is not so early in ripening. The shoots require to be thinned, although the plant fruits well when allowed to grow at will. At the present time the bushes are covered with fruit. F. [Our correspondent sent some nice-looking fruits, with the calyx quite brown and dry, but the fruits were very acid. Ed.]

USEFUL ROSES.—Your correspondent, "A. L. G.," is surprised that I omitted the four Roses he mentions—good and well-known varieties; he also calls attention to another good Rose, Madame Gabrielle Luizet, and refers to Rose Pierre Notting as one probably not now seen often in good condition in private gardens. To describe Wm. Lambert as pale yellow in colour is obviously a slip of the pen on my part, the colour of that useful variety being generally well known. To give a long list of names of Roses in a calendar of operations would look very much like having copied them from a catalogue; even then, unless Roses are cultivated by some persons as a hobby, it is impossible for the ordinary gardener of a private establishment to set apart the necessary space for growing the numerous new seedlings or sports sent out yearly. The attributes of new Roses can only be tested by growing them with varieties of proved merit. Even so, many of the vaunted new varieties are discarded after a few years' trials, the result being the survival of the fittest. For the benefit of "A. L. G.," and other young gardeners, I append a list of the best varieties of Roses that I have grown:—*Hybrid Perpetuals:* A. R. Williams, Camille Bernardin, Albert Lea, Blotais, useful as a pillar Rose; Beauty of Waltham, the Chas. Verdier family, Alfred Colomb, Abel Carrière, Captain Hayward, Caroline d'Arden, Comtesse

Bertrand de Blacas, Charles Lamb, Comte de Raimbaud, Duke of Albany, Duchess of Bedford, Louis van Hontte—the last three are very good. E. Y. Teas, fine shape; Eclair, Earl Dufferin, and Lady H. Stewart are also good dark varieties; Gloria de Margottin, fine colour, good for pillar work; Francois Michelin, Ella Gordon, one of Mr. Wm. Paul's, fine for autumn; Bruce Findlay, brilliant in colour; Mme. Bois, Mme. Clemence Joigneaux, Lady Sheffield, described as vigorous, but that is hardly accurate—it is, however, a lovely Rose in form and colour, but not one that I should plant in quantity; Horace Vernet, Victor Hugo, splendid colour and perfume; Violette Bouyer, light, extra. *Climbing Roses:* Reine Olga de Wurtemberg, Monsieur Desir, Madame Berard, Kaiserin Frederick, the blooms change to a lovely colour when past their best; Germaine Trochon, Souvenir de Madame Joseph Metral, with several others already noted. *Teas:* Beauté Inconstante, Anna Olivier, very fine; Comtesse Riza du Parc, Enchantress, this is very fine, clean in growth, vigorous, flowering late; Bridesmaid; Luciole, variable in colour; Madame Guinoisseau, good yellow, clean, and free; Grande Duchesse Anastasie, very pretty; Mrs. James Wilson, vigorous and free, sometimes subject to mildew; Souvenir de Catherine Guillot, and Souvenir de Gabrielle Drevet; White Maman Cochet, lemon-white in colour, very promising. *Hybrid Teas:* Augustine Guinoisseau; Mrs. Grant, Aurora, extra and sweet; Gruss aus Teplitz, good colour, likely to be useful for massing; Liberty, promises well but appears weak, probably from over propagation; and Souvenir de Madame Ernest Chauvin. While some good blooms of Roses are always acceptable for general purposes, it is better to grow varieties that will flower in quantity, are of good constitution, and possess decided colours, and while they may not possess the rich colours and fragrance of the H.P.'s, the hybrid Teas and Teas are most useful in these respects. Some of the dark-coloured H.P.'s are quickly affected by hot sunshine, causing them to scald, particularly during showery weather, and in order to preserve the beauty of the flowers some slight shade is necessary at those times. The tints of some of the lighter-coloured Roses quickly fade in the sunshine. I have used for the purpose Japanese parasols, mounted on small iron rods of different heights; but with some visitors the gay appearance of these will attract almost as much attention as the Roses. T. H. Studd.

IPOMEA AUREA, OR ROSA DE SINALOA.—I have just received from Herr H. Henkel, of Darmstadt, a growing plant of this apparently new, beautiful, and most interesting tuberous-rooted perennial Mexican trailer, of which I can find no mention in any of my dictionaries or books of reference, nor in the great *Index Kewensis*. It has an extremely slight wire-like stem, resembling that of the tuberous-rooted *Tropaeolums*, and leaves resembling those of one of the small *Passifloras*. It is described as a quick-growing climber, bearing large flowers of a soft yellow. I shall be glad if any of your readers who know this plant in its native country will tell us something more about it. W. E. G.

SEED AND NURSERY TRADING SPREAD OVER THREE CENTURIES IN ONE FAMILY.—In reply to "Ancient" in your issue of October 12, I think I can claim seniority. Through a good portion of the eighteenth, all through the nineteenth centuries, and the start of the twentieth, my family has been engaged in the nursery business. My grandfather, the founder of the business, was born in or about the same year as King George III., 1738 or 1740. When this Richard Hartland reached manhood, he went to Kew Gardens as one of the staff, got noticed by the then Marquis of Bute, and James Earl of Kingston of Mitchellstown Castle, in this county, both of whom encouraged him to go to Ireland. He went and got special apartments in the Castle, his first work being the laying out of the entire grounds

from the beginning. It is but a few years since I had a letter from the present Countess, in which she says that my grandfather must have been a true artist at his work, from the manner in which he grouped his trees for autumnal effect. He was at this period about twenty-five or thirty years old (he married in 1779 a Christina Baylor, of Fermoy). At all events he "came to stay," starting three nurseries, the one on the Kingston estate, and he rented two other establishments. His patrons were the Aldworths of Newmarket, in this county (Cork); and the Gascoynes of Castle Oliver in Ireland, and Yorkshire in England. He finally settled down at a fourth place, Bellevue, Mallow, where he died in 1821, leaving the business to my father, his third son (Wm. Baylor Hartland); and where I, Wm. Baylor Hartland the second, was born in 1836. My eldest son, a William also, is now twenty-two years of age, and is with me at the same calling, and represents the fourth generation. My memory carries me back to the difficulties at that time to get skilled labour, to line out young seedlings, Larch particularly, and how my father used to get some of his tree-seeds gathered locally by children, and brought for miles in sacks to the place. His great trouble was to get the Pine-cones to shed. I well remember their being sent to a neighbour's mill-kiln and spread out; the residue he would have in sacks suspended to the rafters of a boiler-house, where burned a huge turf fire. More tree-seeds came from Scotland, specially from Peter Lawson & Sons of Edinburgh. The seed-drawers then were primitive, real curiosities, bearing such names for Peas as Early Charlton, Early Warwick, Blue Prussian, Double Blossom, France, Bishop's Long Pod, and, I think, Champion of England as a wrinkled Marrow. There was one Parsnip, Hollow Crown, and three Carrots. The flower-seeds were Sweet Pea, Mignonette, Yellow Lupin, Collinsia bicolor, Nasturtium, Nemophila insignis, and eight or ten others. Hay-seeds were White York Meadow Grass; Italian and perennial Ryegrasses were scarcely sown; Mangolds and Swede-Turnips only very few, and those limited to experiments on gentlemen's estates. The garden seeds chiefly came from the old firm of Minier, Nash & Nash, at 60, Strand, London, next door to Coutts' Bank; and owing to adverse winds, the sailing vessels conveying them would be three or four weeks at sea. I have lived all through Her late Majesty's long reign, and seen all the changes in agricultural matters from the timber plough, the reaping with a sickle or hook, to the great facilities of the present day, in both the sowing and harvesting. We had no Potato blight until 1846, the haulms keeping green until cut down naturally by frost. I hope I have proved to have a strong claim to seniority in a calling to which I am proud to belong. Wm. Baylor Hartland, *Seedsmen to Her late Majesty Queen Victoria, Ware House, Patrick Street, Cork.*

THE "BACK-BULBS" OF ORCHIDS.—I have read with interest Mr. O'Brien's article in the *Gardeners' Chronicle* on the "Back-bulbs of Orchids." I may say that I have had a rather lengthy experience of the practice he recommends, more particularly those of Lelico-Cattleyas, and to which I will confine my remarks. Many of our leading cultivators of Orchids remove the back pseudo-bulbs of rare and choice species, but there is doubtless a certain amount of risk in so doing; and I have known of plants being spoiled thereby. Some five years ago a plant was taken before the Royal Horticultural Society's Orchid Committee at the Drill Hall, Westminster, and it received a Certificate, being a unique specimen. Two days after having been shown there it was divided, and in less than two months both portions were dead. There always exists a desire to possess a duplicate of any rare or choice plants, but my advice is, let the back pseudo-bulbs remain if there is any risk whatever in dividing the plant. My experience differs somewhat from that of Mr. O'Brien. When I am going to divide a choice plant, I carefully examine the

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back-bulbs in order to discover dormant eyes, if there are any, and if I find none, I never attempt to divide that plant, believing that if the eyes of a Lælio-Cattleya are non-existent, nothing short of a miracle will cause them to grow. If satisfied myself that dormant eyes are present, I divide the plant with a sharp knife, and if I can take a leaty bulb with the back portion, so much the better. In potting (whether in pot or pan), I fill up to within 1 inch of the rim with clean crocks, and secure the plant to a stake firmly bedded in the crocks, and fill the pot with sound fresh sphagnum-moss, firmly pressed down. The pot is then immersed in tepid water, and subsequently placed at the warmest part of the Cattleya-house, and never allowed to become dry until growth appears. I cannot understand how Mr. O'Brien's method of withholding water until growth appears can possibly succeed. I have had many successes while following the methods named above, and also some failures. *Robert Johnson, Stand Hall Gardens, Whitefield, Manchester.*

RAIN AND ARTIFICIAL WATERING OF PLANTS.—With reference to a note in this journal on p. 286, of Mr. F. T. Mott, I beg to say my experiments were limited to two species of plants, viz., *Ricinus communis* and *Lycopersicon esculentum*, the Castor-oil plant and the Tomato. A specimen of each was always covered in such a way (before rain fell) that not a drop could reach the plant. Artificial watering always took place by means of a very large spray, but with very small openings, so that the water could not fall otherwise than in drops. The other specimen received, every time rain fell, the largest possible amount, as the plant was cultivated in a very exposed spot of the garden. Both specimens grew vigorously, and not the slightest difference could be observed. They flowered and fruited, and ripe fruits were gathered. From the *Ricinus* the first ripe fruit was picked off on Sept. 28, from the Tomato on Sept. 22; both specimens showed ripe fruits on the same day. *M. Buxmann.*

DENDROBIUM NOBILE.—On the occasion of a visit that I paid to the gardens of T. Taylor, Esq., Margery Hall, near Reigate, I noticed a number of aged plants of *Dendrobium nobile* just coming into profuse flower. On enquiry of the gardener, Mr. Seaman, he gave me information in regard to his method of getting *D. nobile* to flower at this season. The plants were grown in the ordinary manner, after flowering last February, till about the middle of the month of July, at which time the young growths were nearly made up. They were then placed in a cool-house for a few days to harden, and at the end of that month they were placed out-of-doors in the full sun without any protection whatever, where they remained till the end of the month of September. The flower-buds got very forward, and the plants, on being brought under glass, the former began to develop, and on October 22 a good many of them had expanded, and the plants promised to be a mass of flower in about ten days later. The young growths are not injured by this out-of-doors treatment; in fact, the pseudo-bulbs are hard and well developed. I have often observed a few odd flowers at this season, especially on plants newly-imported, but never before have I seen *D. nobile* flowering as profusely in October as in the spring. Mr. Seaman will probably take these plants to one of the November meetings of the Royal Horticultural Society. I also noted several fine plants of the Australian species, *D. speciosum* var. *Hilli*, pushing up their flower-buds. This plant grows freely under Mr. Seaman's management, the same kind of treatment being afforded after growth is finished as that found to answer with *D. nobile*, and the results are equally good every year, and the growth strong. *W. P. Bonnd, Gatton.*

PLANT PORTRAITS.

HAMAMELIS VIRGINIANA. WHITE HAZEL. *Mechanics' Monthly, October 1.*

OCTOBER 20. There was a very nice show on the occasion of the fortnightly meeting of the Committee on Tuesday last, at the Drill Hall, Westminster. In many districts frost had cut down most of the hardy flowers, and there were very few exhibited; but in place of them were rich displays of Chrysanthemums from most of the trade growers, including a particularly effective group from Messrs. W. WELLS & Co., Earlswood, Surrey—seven of the eight awards recommended by the Floral Committee were for Chrysanthemums, and four of these were gained by Mr. GODFREY, of Exmouth. The remaining award was to a most promising sport from the ever popular *Begonia*, *Gloire de Lorraine*, shown by the executors of the late THOMAS ROCHFORD, Broxbourne.

The Orchid Committee recommended awards including three First-class Certificates and four Awards of Merit. Before the Fruit and Vegetable Committee there were shown excellent collections of fruit and Vegetables. From ROBERT LEITCH, Esq. (gr.), Mr. Geo. Woodward, the Earl of CAVENISHAM (gr.), Mr. W. Pope, and Messrs. H. CANSELL & SONS, Mr. ROGER LEITCH, Skilful fruit-grower, Mr. Geo. Woodward, it was unanimously awarded the Society's Gold Medal for a collection of Apples and Pears of wonderful quality. A First-class Certificate was recommended to *Grape Reine Olga*, a variety specially useful for cultivation out-of-doors. In the afternoon a lecture was delivered by Professor GEORGE HENSTLOW.

There was insufficient light during the greater part of the day to distinguish the colours perfectly.

Floral Committee.

Present, W. Marshall, Esq. (Chairman), and Messrs. C. T. Druva, H. B. May, Jas. Walker, R. Deun, G. Reith, Jas. Hindon, J. F. McLeod, Jno. Jennings, Charles Jeffries, C. R. Leitch, Chas. Dixon, W. P. Thomson, Chas. E. Pearson, Herbert J. Cutbush, George Gordon, Chas. E. Swan, J. Fraser, J. W. Barr, R. C. Notcutt, G. H. Jenkins, W. J. James, George Nicholson, Ed. Maxwell, Geo. Bell, and E. T. Cook.

A group of miscellaneous plants, of which the principal feature was some plants of *Colonia*, was shown by PENEILE PENEILE, Esq., Woodlands, Streatham, S.W. The ground-work was of Ferns, and towards the face of the group were well-flowered plants of *Primula obtusum* (Silver Flora Medal).

Messrs. W. PATER & SONS, Waltham Cross Nurseries, Herts., exhibited a group of their new Tea Rose Coralina. The plants were in pots, but had been cultivated out-of-doors, and there were vases of blooms also. The Rose is remarkable for its free colouring, and is so free and continuous in blooming, it would make a good variety for massing in beds.

Messrs. T. S. WADE & CO., Feltham, Middlesex, exhibited cut flowers of a new late blooming perennial Aster, and a collection of varieties of *Serine* in pots. The well-known *Fothergill major*, Prince of Orange, *Plants*, &c., were included, and several new ones, as *Selle*, silver red in colour, with a deeper coloured line through the centre of the petals.

Messrs. JAS. VETCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of plants of the winter flowering hybrid *Begonia*, Mrs. Heal, figured in the *Gardener's Chronicle*, and many times described in these pages. The colour of the flowers is very persistent, with just a shade of purple, and they are very persistent. An excellent winter flowering plant.

The Executors of the late Mr. THOMAS ROCHFORD, Thornford Hall Nurseries, Broxbourne, Herts., exhibited a considerable group of plants of a *Begonia* called *Thornford Hall*. It is a sport from *choire de Lorraine*, with larger flowers than the type, and much lighter in colour than those of Mrs. Leopold de Rothschild. Indeed, it is almost white, and apparently has a very much stronger constitution than the variety *Falson* (a Silver Bank'sian Medal).

A group of the *Begonia* Mrs. Leopold de Rothschild, a sport from *choire de Lorraine*, was shown by Messrs. PETER & SONS, Kewpall Park Nurseries, West Norwood, London, S.E. The variety has larger and rather paler coloured flowers than the type.

Mr. ROBERT GODFREY, Ltd., 28, Crawford Street, London, W., exhibited a very large group of *Colocynthis*. Most of them were small plants, suitable for table adornment, and were well grown, and highly coloured. Several new varieties were included in the group, such as *Bols*, with rather short, moderately wide leaves of good colour (Silver Bank'sian Medal).

Mr. JOHN RUSSELL, Richmond Nurseries, Surrey, showed a group of *Aucubas*. There were fine plants of *A. macrophylla variegata*, *A. japonica*, *A. j. latimaculata* mas. *A. j. vera*, *A. j. bicolor*, &c. In fruit were *A. japonica longifolia*, and *A. j. vera*. These were very abundantly berried, and would make fine decorative plants (Bronze Flora Medal).

Messrs. BAIRD & SONS, King Street, Covent Garden, London, W.C., exhibited a collection of hardy flowers. *Kaiphofia Triumph*, a fine new one of the yellow flowered section; also *K. Coralina superba* (deep colour), and others. Also varieties of Perennial *Asters*, *Schizostylis coccinea*, *Montbretias*, &c. In pots was *Crocus asturicus atropurpureus*, a little purple autumn-flowering variety. This group, being less densely packed than usual, was correspondingly more effective.

Mr. DRAPS, Don Locken, Bruxelles, showed nine large plants of *Cordylifolia Desmetiana*, a variety with large, wide, almost erect leaves, of green and red colour. The youngest leaves were wholly red (Silver Bank'sian Medal).

Messrs. JOHN WATERER & SONS, Ltd., the American Nurseries, Bagshot, Surrey, exhibited a group of healthy, symmetrically shaped plants of *Ilex*, *Juniper*, *Retinosporas*, *Taxus*, *Aucubas*, *Alies*, *Thuas*, *Andromeda japonica variegata*, *Skimmia japonica* in bloom, a very fine dense bush; and *S. Fortunei*, loaded with its fruits. Among *Retinosporas*, there were *R. filitica*, with distinctly marked variegation; *R. pistifera aurea*, *R. plumosa aurea*, and *R. oblonga nana aurea*, with distinct and profuse variegation. Among *Junipers*, mention may be made of *Japonica aurea*, the whole plant having a golden hue; among *Alies* there were *A. pungens glauca*, and *A. Menziesii*, the Californian Henlock Spruce. Among *Cypripis* we noted *C. Lawsoniana gracilis*, a variety whose shoots are pendulous at the tips, giving the tree a graceful appearance. *C. L. aurea*, a very dense variegation; also *C. L. versicolor*, *Thunbergia variegata*, with foliage yellow tipped, is a striking variety (Silver Bank'sian Medal).

CHRYSANTHEMUMS.

Messrs. W. WELLS & CO., Ltd., Earlswood, Kedhill, made a very imposing exhibit of Chrysanthemums, including plants in pots and cut blooms. One of the varieties shown is described under "Awards," but there was a large number of novelties displayed many of which are of a most promising nature. This was the most showy group in the hall, and it is a pity that the building was so dimly lighted. *Calvat's Sun* is a name given to an enormous yellow Japanese flower that may be very valuable, the blooms shown were not fully expanded. *T. Himphries*, crimson, with bronze reverse, is a very fine colour, *Phyllis* has exceptionally broad, reddish crimson florets, with light buff reverse, most distinct. Mrs. Alex. McKelvey is a large yellow Japanese, with streaks of red, *Ben Wells* is a mammoth Japanese of white or greenish white colour, florets of wonderful length (silver gilt Flora Medal).

Mr. W. J. GODFREY, Exmouth, Devon, made a very large display of Chrysanthemums, most of which were seedlings raised at Exmouth (see Awards); Silver gilt Bank'sian Medal.

Bush plants of Chrysanthemums were finely shown by Mr. K. PROSE, Richmond, excellent market plants, 1 to 2 feet high, with a dozen or more blooms upon a plant from the terminal buds, of course, with the side-buds removed. The varieties were *Mme. Gustave Henri*, *Bonquet*, *Earl*, *Kyerolet*, *scarlet*, and *Soleil d'Octobre* (Bronze Bank'sian Medal).

Miss EASTON, Richmond, Kent, showed a basket furnished with large flowers of Chrysanthemums and another basket of autumn leaves and berries (Silver Bank'sian Medal).

Messrs. JAS. VETCH & SONS, Ltd., Chelsea, exhibited a large and imposing group of Chrysanthemums, in pots. All of them were exhibition varieties, and some were well shown, carrying very fine blooms. *Soleil d'Octobre* was the best, and indeed all the earlier flowering varieties succeeded best in a congested district like Chelsea. Other good blooms were *General Leach*, *Earth*, *Pinkington*, *Mrs. Greenfield*, *Reginald Godfrey*, &c. The varieties were very numerous, and all of them good and up to date (Silver Flora Medal).

A nice group of single flowered Chrysanthemums was shown by G. FRIGGISON, Esq., The Belles, Weybridge (gr. Mr. F. W. Smith); there were some cutting like twenty good varieties, and the blooms were arranged thinly in vases.

There were also Chrysanthemums from Mr. H. WELKS, Thornford Hall Gardens, Derby. Mr. P. KINGS, gr. to W. H. SMITH, Esq., Greenlands, Henley on Thames, and Messrs. H. CANSELL & SONS, Swanley.

AWARDS OF MERIT.

Bignonia T. erecta HOLL.—A sport from the variety *clara* de L'Europe, with larger flowers than those of the type, and mostly white in colour. Of very robust habit, and an excellent garden flower. From the Exhibitors of the late THOMAS Broomfield, Turnford Hall Nurseries.

Chrysanthemum The King.—From Mr. W. J. GODFREY, (See p. 314, col. 2.)

Chrysanthemum Snowflake (GODFREY).—See p. 298, col. 2.

Chrysanthemum Elizabeth (GODFREY).—See p. 314, col. 2.

Chrysanthemum Mrs. Bessie Godfrey (GODFREY).—See p. 314, col. 2.

Chrysanthemum A. Bourne's Gold of October.—A very pretty sport from this well-known variety. A nice group of sport from the novelty was shown by Messrs. G. PATERSON & SONS, Floral Nursery, 8, Tottenham. In addition to the Award of Merit a Bronze Flora Medal was awarded the group.

Chrysanthemum Mrs. John Hervey.—A sport from Australia. Colour more than greenish shade. Very fine flowers, and plant-bearing flowers, were shown by Messrs. W. WELLS & CO., Ltd., Earlwood, Redhill.

Chrysanthemum Miss May Williams.—A Pompon variety of pale violet colour, or flesh perhaps in a better light. From Messrs. H. CANNELL & SONS, Swanley.

Orchid Committee.

Present: Barry J. Veitch, Esq., in the Chair, and Messrs. J. O'Brien (Hon. Sec.), H. Little, H. J. Potter, J. W. Odell, W. H. Young, F. J. Thorne, H. J. Chapman, H. A. Tracy, E. Hill, J. Douglas, H. Ballantine, H. M. Pollett, R. Brooman-White, and W. A. Bihely.

Messrs. JAS. VEITCH & SONS, Chelsea, staged a very interesting group, comprising a selection of their late autumn and winter-flowering hybrids, and for which a Silver Flora Medal was awarded. The central plant was a very fine variety of *Laelio-Cattleya* × *Domitiana langleyensis* (L. purpurata Bryssina × C. aurea), of a dark colour, around which were three of the pretty *L. Perrini* crosses, viz. L. × *Statteriana* (C. labata × L. Perrini), L. × *Semirama* (L. Perrini × C. Gaskelliana), L. × *Decca* (C. aurea × L. Perrini), two varieties of each; also plants of the showy *Cattleya* × *Portia* (Bowringiana × *labiata*), *Cattleya* × *Pabia* (*labiata* × aurea), *Laelia* Mrs. M. Giraldo (L. digbyana × L. emabariana), and others, among which were three fine novelties (see list of Awards).

C. H. FELING, Esq., Southgate House, Southgate, Mr. Steeking, staged an extensive and effective group, the main feature in which was the finely-grown and profusely flowered varieties of *Cattleya labiata*. With them were a good general selection of the Orchids of the season, including many hybrid *Cypripediums*, C. × *Morgania*, and C. *insigne* Chantini, and hybrids of C. *insigne* being especially good; also a fine specimen of *Miltonia candida*, another of *M. spectabilis* Moreliana, varieties of *Laelia pumila*, *Odontoglossum crispum*, *oncidium tigrinum*, and its ally, O. unguiculatum; *Odontoglossum maculatum*, &c. (Silver Flora Medal).

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegg), secured a Silver Flora Medal for a fine selection of *Cattleya labiata*, of both white and coloured varieties, two of which were given Awards of Merit; plants of *Cattleya* × *Mantini*, and the improvement on it, C. × *John Bunley* (Hordyana × Bowringiana), *Laelio-Cattleya* × *Exoniensis*, *Cypripedium insigne* Sonderi, *Cattleya aurea*, C. *harrisoniana* alba, and spikes of a finely coloured *Cymbidium giganteum*.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm Murray), showed *Cypripedium* × *Lawrethi*, "Oakwood variety" (*Lawrethianum* Hyemum × *bellatulum*), a fine flower, with white ground colour, densely spotted with purple.

COL BRYNER, M.P., Isington House, Puddletown, Dorchester (gr., Mr. Powell), showed a flower of *Laelio-Cattleya* × *Powellii* (L. C. × *Schtrouma* Wollastoniana × C. Mendel), a pretty flower, with pale blue sepals and petals, and rather showy labellum, the front of which was crimson-rose, the disc bright yellow.

H. L. BISCHOFFHEIM, Esq., The Warren House, Stanmore (gr., Mr. Gleeson), showed a flower of a very handsome and richly-coloured *Cattleya labiata*. The sepals and petals were warm rose purple, the lip almost entirely of a rich purplish-ruby-crimson colour.

FRAN ADA BRANDI, Zurich (gr., Mr. Schlich), sent out flowers of *Epipedium*, &c.

Awards.

FIRST-CLASS CERTIFICATE.

Cattleya Wesselsii, "Elegant variety," from Sir FREDERICK WILSON, Bart., Clary Lawn, East Sheen (gr., Mr. W. H. Young).—A charming silvery white flower

The front of the lip was beautifully marked with light purplish-rose, around which was a broad white margin, and the disc of the lip was also white, the yellow colour seen on each side in the ordinary form being suppressed.

Laelia × *Clivia* (crispa × xanthina), from Sir FREDERICK WILSON, Bart. (gr., Mr. W. H. Young).—The inflorescence shown bore four flowers of good size, the sepals and petals of a clear orange-yellow, and the lip light cherry-red, with the yellow ground-colour showing through in the centre and base.

Cattleya Broomie, "Velvet variety" (Harrisoniana × Bowringiana), from Messrs. JAS. VEITCH & SONS, Chelsea.—One of the surprises of Orchid hybridisation, for to one would expect to get a flower equal in size to C. *Uleya Schrodera*, and with much of its thick texture, and crossing two comparatively small-flowered species. The large flowers suggest a new thought in regard to Orchid hybridisation, viz., whether in this case the vital force necessary to produce the many-flowered inflorescence of C. *Bowringiana* was not to a certain extent expended on producing the few flowers entailed by the cross with C. *Harrisoniana*, and large flowers resulted? The sepals and petals are broad, the petals abnormally so, and of that pretty Peach-blossom tint seen in good C. *Schrodera*; the lip is large, and openly displayed, the centre of rich orange colour, in front of which is a band of crimson-purple.

AWARD OF MERIT.

Cattleya labiata "G.G. Whitelegg," from J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegg).—A beautiful variety of the C. *L. Cooksoni*, and C. *L. Gilmorei* class, but with less purple on the lip. Flower of fine form, pure white, with a wedge-shaped blotch in the centre of the lip, and a chrome-yellow tinge on the disc.

Cattleya labiata glauca, from J. BRADSHAW, Esq., Southgate (gr., Mr. Whitelegg).—A bold flower remarkable for its peculiar bluish tint. Sepals and petals lavender coloured; front of the lip purplish-slate blue.

Laelia Cattleya × *Ophe* (L. xanthina × C. *Domitiana aurea*), from Messrs. JAS. VEITCH & SONS, Chelsea. A singular and distinct hybrid which will greatly improve, as it was scarcely ready to show. Sepals and petals greenish-yellow; lip tawny-purple, with the yellow shade showing through the surface colour.

Cattleya Bostia (Bowringiana × guttata), from Messrs. JAS. VEITCH & SONS, Chelsea.—In this form of C. *guttata* is closely adhered to, but the colour imparted by Bowringiana. Sepals and petals purple; front of the lip crimson-purple.

Fruit and Vegetable Committee.

Present: G. Buryard, Esq., in the Chair, and Messrs. H. Balderson, G. Woodward, W. Bates, S. Mortimer, A. Dean, W. Pope, W. Eyre, M. Gleeson, G. Kell, F. Q. Lane, J. Jacques, J. Smith, J. Willard, G. Wythes, G. Norman, H. S. Rivers, E. Shaw Blaker, G. T. Miles, W. Wilks, and C. Herpin.

A remarkable collection of Apples and Peas was exhibited by Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court Estate, Maidstone.

There were one hundred and twenty dishes, and the size and quality of the Apples especially, was extraordinary. All of them were good, but those following were particularly so:—*Eyles's Kernel*, Newton Wonder, Lord Derby, Malting, Scarlet Pearmain, Waltham Abbey Seedling, Alfriston, Belle de Fontaine, Golden Nalder, Washington, Peasgood's Nonsuch, King of Tomkins County, Wealthy, Alexander, Mere de Metz, Cox's Orange Pippin, Allington Pippin, Bismarck, Malder's Pearmain, and Adams' Pearmain. The best of the Peas were: *Beurre d'Amont*, *Gansel's Bergamot*, *Early* *4 Days*, *Pittinston Duchess*, *Doyleme du Coniac*, *Doyleme Boutsch*, *Beurre d'Angoulême*, *Jean van Geert*, *Basse Crassane*, and *Genrre d'Archeval* (Gold Medal).

Strawberry St. Joseph was shown by Sir D. L. BROMFIELD, Bart., Duddington Gardens, Nantwich (gr., Mr. W. Wingham), who contributed a few late fruits.

Chiswick Peach Tomato was well shown by PRINCE TITCHELL, Esq., Brighton. It is a variety possessing unusually good flavour (Vote of Thanks).

Fruits of a Raspberry, without name, were shown by R. C. FOSTER, Esq., The Grange, Sutton, Surrey (gr., Mr. W. Simpson), who has gathered 11 lbs. of fruit during the last ten days. The variety was thought by some to be that of *Belle de Fontenay*.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited four varieties of the Quince, in-

cluding the Portugal, Bourgeant, Van Dieman's, and the Pear-shaped variety. The Bourgeant (a novelty) is the handsomest and most distinct.

Pear Grey Friar is a variety exhibited by Messrs. CROSS & SONS, Wisbech, who stated that it is the one most grown in that district. The fruits were of rather good appearance, juicy, very sweet, and of moderate flavour. The fruits ripen in October, and the variety is described as a very free cropper (Vote of Thanks).

The Late Plum, Duo-pyrus Kaki, was shown by Lord ILCHESTER, II., and House, Kensington (Mr. Dixon, gr.). The fruits, which had been grown out-of-doors at Kensington, were not quite ripe, but were fair in size (Vote of Thanks).

From Captain CAERWYS, Welford Park, Newbury (gr., Mr. C. Ross), were shown two seedling Apples, Cropwell and Houlton, both being of good appearance, but no award was granted them.

Gros Maroc Grape was shown well by H. STRUICK, Esq., Givens Grove, Leatherhead (gr., Mr. Peters). There has been some discussion alleging the existence of two varieties of this Grape, one with round the other with oval berries. Indeed, this was the reason for the grapes being shown, as both descriptions of berry were to be seen on one bunch (Vote of Thanks).

A fine collection of dried Plums was shown by Mr. JAS. UDAR, Superintendent of the County Experimental Garden, Droitwich; there were bright-looking specimens of some eighteen to twenty varieties; also samples in glass bottles of Apple-marmalade and jelly, and Pear-jelly; these had been made from waste products, namely, the peel and cores. There were also dried Apples, whole, and in rings, and various sorts of vegetables. Information was given as to the loss of weight during evaporation, also upon the temperature necessary and the duration of the operation. We would refer any reader requiring information upon this subject to an article published in the *Gardeners' Chronicle*, on Sept. 21, p. 27. Mr. UDAR was given a Silver Knightian Medal.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a magnificent collection of vegetables, for which a Silver-gilt Knightian Medal was awarded. The cultivation was excellent as witnessed by the weight of some of the roots, and the quality of the Autumn-giant Cauliflowers and Improved Defence Cabbage; Ailsa Craig Cranston's Excelsior, and Cocoon-tun Onions, were very heavy. There were very fine Carrots, Leeks, Parsnips, Up-to-date Potatoes, Beet (rather long), Turnips, Marrows, and Gourds. In addition to the collection of vegetables from Swanley, Messrs. Cannell showed a collection of Potatoes, including upwards of forty varieties. These, too, were very commendable, the tubers being of nice size, clean, and excellent in the skin.

Collections of vegetables.—The Earl of CARMARVON, Highclere Castle, Newbury (gr., Mr. W. Pope), was awarded a Silver-gilt Knightian Medal for a collection of wonderfully fine produce: the Onions especially, consisting as they did of numerous varieties, and some of enormous size. The smaller and perhaps more useful bulbs numbered thirty-one varieties. Evidently the drought was severely felt at Highclere whilst the Onions were growing. The larger Onions consisted of very large massive bulbs of Lord Keeper, Ailsa Craig, Devereil's Tankard, The Kitchener, and Improved Wroton, all three almost identical in shape; Excelsior, Cocoon-tun, Aristocrat, Surrey Red, Ne Plus Ultra, Anglo-Spanish, a fine flatish bulb, &c. The Leeks were Dobbie's International, the blanched portion being about 1 foot in length; the Carrots, New Intermediate, were very clean in the skin, and of isophasy proportions. Parsnip Sutton's Tender-and-True, the perfection of form in a Parsnip, a nice dish of Cresses (*Stachys tuberosa*), Turnip Early Snowdrop, Celeries Leicester Red and Solid White; Brussels sprouts, Sutton's Dwarf Stem, large but solid sprouts; Cauliflowers Autumn Giant, fine large close heads, and Autumn Mammoth, a smaller variety; the pretty Cucumber Lockie's Perfection; Tomato Perfection; Sutton's Hooded Beet-root, small shapely roots; Savoy Green Curled, and Large Early; and of Potatoes, nineteen dishes and varieties were shown, handsome tubers generally, of all-round favourite varieties. Of rounds we noted Carter's Abundance, Sutton's Satisfaction, Champion of England, and Sutton's Flowerball; of oval and kidney-shaped varieties there were Sutton's Epicure Sir John Mlewlyn, Snowdrop, Ideal, Sharpe's Victor Centurion, Magnum Bonum, &c.

Awards.

Grape River Olga.—This is a variety we have seen exhibited every autumn for years past. It has round berries of red colour, considerable size, and of good flavour. It ripens well out-of-doors almost every

season. The three lambs shown on Tuesday were grown on a V. against a wall, and the variety may be strongly recommended for out-of-door cultivation. From Mr. Will Taylor, Osborn Nursery, Hampton, Middlesex (First-class Certificate).

The Lecture.

Professor HENSLOW delivered a lecture on the "Mechanism of Plant Structures." Observing that Huxley said that Lamarck's theory if true for animals, could not apply to vegetables, the lecturer's object was to prove that it did, and that new structures are produced by plants in response to external forces. Taking roots, he showed that the structure of dicotyledonous roots of Pandanus, &c., was constructed so as to resist lateral fracture by "waxing," as well as strains by "pulls." He next illustrated, from Karner's and others' *Nature's History of Plants*, how the arrangement of woody fibre, collenchyma, &c., follows the nature of combination of ridges and hollow cylinders, with the same suits.

Climbing plants supplied one of the best illustrations, as among tropical lianes, some were ribbon shaped, but bulged on alternate sides, giving great strength and elasticity; others, like *Campotrois*, the "Monkey Ladder," had longitudinal "flanges," in addition; others resembled cables. The anomalous character of woody climbers, however different among themselves, agreed in possessing poor wood, large vessels, and much cellular corky tissue, giving elasticity. That the conclusion thus derived from indirect evidence, that these structures are the result of response to the strains felt by the lianes, hanging among the trees of tropical forests, is justifiable, is shown by the fact that experiments prove that when stems or leaf stalks are artificially weighted, they soon acquire a much greater strength than if they are allowed to grow naturally. This additional power to resist fracture is acquired by developing wood and other mechanical tissues in response to the external force.

Numerous illustrations can also be found in Nature, thus, a self-supporting stem of Ivy, *Wistaria*, &c. compared with one of the same diameter, but supported, the path will be found greater, and the wood less, in the latter case, and the reverse in the former.

THE DULWICH CHRYSANTHEMUM.

On THURSDAY, at a meeting of the Dulwich Chrysanthemum Society held on the above date, Mr. Percy Waterer read a paper on the "Preparation and Cultivation of the Chrysanthemum," the more important points of which we here give.

The lecturer began with the preparation of the old plants for autumn cuttings, and advised the selection of six suckers to a plant, and of some foliage on shoots of varieties shy in making suckers. He said that he did not believe it a necessity to take cuttings on a stated date, or that side shoots made bad cuttings as was often thought.

Cuttings should be about 3 inches long, hard, and short jointed, and should be generally inserted during December, but sometimes in May. Mr. Waterer and Florence Molyneux were better if struck later, and the break bud selected. Use a thumb-nail for each cutting, put a label to each, and place on a bottom of cocoa nut fibre or earthenware, in small frames in a cool house or frame. The soil should be equal parts of loam and leaf-mould, with sharp sand, and put silver-sand in the hole made for the cutting. The plants should be slightly syringed, but not watered, and should be covered in three or four weeks the glass may be gradually lowered.

Notes taken during a number of seasons led to the conclusion that the importance of pinching and taking buds at specified dates is over estimated, as the seasons cause much variation in the plants. The best practice is to grow only those sorts which experience has shown throw the best buds naturally at the period required. Decorative varieties should be pinched when 6 or 8 inches high, and the resulting shoots when 3 to 7 inches long, the centre branch being tied to a stake and the outer branches to the inner one.

In regard to manures, he said that one of the best manures for horticultural purposes is sun dried blood, but vitriolised blood used in a fresh state is dangerous, and ought to be kept twelve months before using it.

During August, top dress with fowl or pigeon-maniure a year old, or Peruvian guano, mixed with eight times the quantity of fine loam, covering the soil, 1 inch deep. Repeat this before hoisting the plants. Remember that the foliage denotes the state of health of the plant, and a heavily looking give soot.

If sticky mists during August, he said, often favour the spread of "rust." The Wye mixture, applied with a fine syringe, is a good preventive. Bought cuttings may be dipped in the same mixture, and an occasional spraying given to plants during the season. Milneux may be kept down with flowers of sulphur dusted on

the leaves, especially the under sides. A green insect, the size of a housefly, is troublesome, and should be caught.

Crown buds taken about the first week in August, and second or third terminals about third week in August, usually give the best results. Other growths should be rubbed out as soon as large enough to handle. Early in September, the houses should be cleaned out and painted, walls limewashed, and the hot-water pipes sulphured, and any plants with blooms showing colour should be hoisted, and the remainder on signs of frost. In favourable weather, syringe the foliage a little. Spread out the plants as much as possible for the first ten days, pinching the buds that develop round the larger ones, and support weak buds with split bamboo. Some of the inclined varieties are improved by allowing the leads to hang down. When the plants have been hoisted a month the too luxuriant foliage may be thinned. If plants are awkward a week before a show, an application of a little of soda or sulphate of ammonia, at the rate of 1 lb. per acre to a gallon of water, will be beneficial.

BRIGHTON AND SUSSEX HORTICULTURAL AND MUTUAL IMPROVEMENT.

On OCTOBER 17, The following report of a lecture on "Town Gardening," by Mr. R. Dain, V.M.H., of Ealing, drew a large attendance at the monthly meeting of the Society. Previous to the lecture there was a small competition with Apples, Pears, and Potatoes; there was also some excellent fruit staged. After some appropriate remarks, Mr. Dain went on to speak of the municipal obligation of the plant streets, contending that it falls largely on municipal bodies to carry out this sort of work, as it is a beauty open space, and to plant trees for shade. He condemned the practice of some suburban land proprietors of encroaching upon the public municipal grounds by planting trees and beds of shrubs which were generally sorry specimens for the greater part of the year, especially in cheap suburban town development, were brought in in the open street, and too frequently planted in a permanent shelter. The practice of placing shrubs on the side of the shade and close to tall trees could not be too severely condemned. It was contended that the small lot of trees only should be planted in a street, if they were to be planted a wide distance apart, so that they would be ample room to development without a necessity for the absurd method of pruning adopted by some local authorities, that only the best kinds of trees should be selected, that planting should be decided by those accustomed to the work and after the careful preparation of the ground; that the municipal body should have the services of a corporation gardener, that he should be a man who had some training in a forest tree nursery, that he should have charge of all open spaces, parks, and streets; he should be adequately trained, and he regarded as one of the most important servants of the local authority.

House gardening was next dealt with, the planting of window boxes and cases, pot-beds, &c. The use of Evergreens and their variegated forms in winter was advocated, and all the year round in localities where flowering plants would do only indifferently well. Elementary window gardening was also dealt with, in courts and alleys, in streets, and various suggestions were thrown out for those who on social and philanthropic grounds advocate house gardening among the poorer classes. Some illustrations drawn from a personal knowledge of what is being done in the East End of London. House gardening was also touched upon, the lecturer regretting that the cultivation of Hyacinths in glasses was so little followed in the present day compared with what it was in the days of Fens. The lecture came to a close with an assertion of the fact that most of the agencies at work in the direction of social regeneration the culture of plants in homes was to be commended.

ALTRINCHAM GARDENERS.

On OCTOBER 22 The first fortnightly lecture of the winter session was held on the above date, when Mr. J. BIRKENHEAD, of the Fern Nursery, Sale, gave a lecture on the "Cultivation and Propagation of Ferns."

Mr. Birkenhead dealt with the subject in a masterly manner. He described the whole routine of Fern cultivation from the prothallus to the fully developed plant. The various modes of growth of different varieties was detailed in an interesting manner. The remarks on propagation proved that care need to be bestowed in the division of Ferns, the raising from spores, and other means of propagation. A subject of the time did not allow the lecturer to deal with the subject of the development of the spore as he would have liked.

There was a large attendance of members, who listened to the lecture with deep interest, which was augmented by a large number of lantern-slides, from photographs taken by Mr. Birkenhead in his nurseries at Sale.

WARGRAVE GARDENERS.

On THURSDAY The members met on the above date to hear a lecture given by Mr. T. J. Powell, Jr., of Park Place, on "The Advantages of Retarded Plants." He said the idea of retarding plants was not a new one, but it was nevertheless a very important one to gardeners who had to keep up a continuous supply of flowers. The great and important work in this direction, carried on by Mr. Jannoch and the late Mr. T. Rotherford, was clearly described. Mr. Powell also referred to Potatos and Rhubarb, which yielded well to the retarding process, if carefully managed, and showed a basket of new Potatos grown from retarded tubers. There were some excellent specimens of the flowers, fruits, and vegetables, by Messrs. Hyslop & Co., Messrs. McKENZIE, Raspberries, Prunus, &c., &c., Physalis, Fuchsia, and Celery, Roubis, &c., &c., Tronolunda, &c., &c., retarded Lilies of the Valley, and Stora (purple leaves). *Il. Col. of Hort. Soc.*

BRISTOL & DISTRICT GARDENERS.

On OCTOBER 21—This Society held its usual fortnightly meeting at St. John's Parish Rooms on the above date. Mr. BIRKENHEAD occupying the chair.

An interesting paper was read by Mr. F. G. THURGOOD, of the Cardiff Gardeners' Association, his subject being "The Dublin" Mr. Treseder being a specialist on this flower, a good number of the society's members availed themselves of the opportunity of getting some excellent information concerning this popular flower, and they were not disappointed, the lecturer tracing its history from its first appearance in this country in 1757 to the present day, clear and concise details were given of the cultural and general treatment, as also the most useful varieties of bedding and furnishing cut flowers. A feature of the evening was the collection of cut blooms of more than fifty varieties of Dublins, shown by Mr. THURGOOD, of which he was unanimously awarded a Special Certificate of Merit.

There were a few exhibits of *Cactus-Dublins*, *Apolypa*, *Incipida*, and *Cactus-lobata*. "The Management of Lawns and Pleasure Grounds," will be the subject for the next fortnightly meeting, being the Prize Essay, won by Mr. Gardner, of Redland.

DEVON AND EXETER GARDENERS.

On OCTOBER 21 Mr. Andrew Hope, Hon. Secretary, read the annual report. The committee remarked that the Association had now completed ten years of its life, years of steady progress and useful work, in which a vast variety of subjects had been handled, all more or less bearing directly on horticulture and on the interests of gardeners and gardening. It was therefore a large matter that some permanent good had been done to gardening as a profession, and to the lovers of it in the neighbourhood. The report sketched the chief events of the year. An excellent series of papers had been arranged for the present session, and the proceedings of the Association appeared to be as bright as at any period of its history.

Responding to a vote of thanks, Mr. Perry said the association had done him the honour to ask him to give a demonstration in fruit drying. He desired say he should find some prejudice among the gardeners to the new methods he advocated. He discovered in the farmers of Devonshire a very great prejudice. Fruit drying was carried on in every country except England, but he hoped it would be introduced into this country to the advantage of the 200,000 acres of orchards that he had. He himself studied horticulture, as he hoped and he hoped they did, not for the purpose of gain, but to secure greater proficiency and to forward the interests of horticulture. He looked to the gardeners to help him in the difficult work he had to do in the country.

NATIONAL CHRYSANTHEMUM.

On OCTOBER 28 At a meeting of the Floral Committee held at the Royal Aquarium on Monday afternoon last, First-class Certificates were awarded to each of the following varieties, excepting that of C. Penfold, and this gained an Award of Merit only.

Chrysanthemum C. Penfold. A light streaky red coloured Japanese, with buff reverse. Much too devoid of colour to meet with general appreciation. From Mr. C. Penfold, Leigh Park Gardens, Havant.

C. Godfrey's King. A very large Japanese flower, colour buff red, with golden reverse. The colour in the centre, until the flower is fully expanded, is conspicuous only that of the reverse of the flower. From Mr. W. J. Godfrey, Exmouth Nurseries, Devon.

C. Godfrey's Pride. An inverted Japanese flower, some of the florets incurve at the tips only. Colour, light crimson, with slatish buff reverse. From Mr. W. J. Godfrey.

C. H. E. Hyman is a Japanese flower, with long, broad florets, the tips of the florets occasionally incurving spoon-like. Colour, reddish bronze, with buff reverse. From Mr. W. J. Godfrey.

C. Kibberley.—This is a very large yellow Japanese flower, but the colour is not so deep as in some others. From Mr. W. J. GODFREY.

C. George Lawrence.—A yellow Japanese, with very occasional nod upon the florets, especially the margin-florets, as shown, were of medium size and quality. From Mr. H. PEKINS, gr., Greenlands, Henley on Thames.

C. Mrs. George Lawrence.—Three plants of this variety were shown. Each was under 3 feet high, and carried one bloom. The flowers are of good size, but rather thin, colour yellow. These were from March struck cuttings, and the flowers may therefore be better. From Mr. H. PEKINS.

C. M. E. Hudson.—A curious Japanese flower of pale ivory-veiled colour, very long florets that twist a little, outside occasionally spoon-like at the tips. The florets subdivide from the centre in a grotesque fashion. From Mr. H. WEEKS, gr., Tinsmiths' Hall, Derby.

C. Violet Lady Beaumont.—A Japanese of rich crimson colour, with bright yellow reverse. It is just the colour required in an exhibition stand, and the reverse is seen but little. From Mr. N. MOLYNEUX, gr., Rooksbury, Eardun.

Amongst other exhibits was a collection of varieties of Chrysanthemum from Messrs. VILMOREN, ANGEREA PÉCIE, Paris. It was interesting to see them from such a distance, but they were not at all comparable in merit with those grown in this country.

PORTSMOUTH CHRYSANTHEMUM.

OCTOBER 23.—The annual autumn show was a success. In the exhibition section most interest centred in the class for forty-eight blooms, half to be Japanese, and the remainder incurved. Mr. HALL, gr. to Lady LOUISA ASHURTON, Melchet Court, Rousey, won 1st prize from three other competitors, showing exceedingly fine Japanese, and nearly full-filled incurved flowers; a specimen of the variety Mrs. Weeks was grand. Other successful flowers were General Fuller, Florence Molyneux, Miss Alice Byron, Edwin Molyneux, and May Vallis; Mr. E. J. Hunt, gr. to PASTOR RALPH, Esq., Ashfield Park, Epsom, was a close 2nd, and Mr. Nobbs, gr. to His Majesty THE KING, Osborne House, Isle of Wight, 3rd.

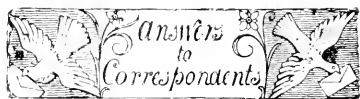
In the class for twenty-four Japanese blooms, 3rd prize, Mr. HALL won the premier award easily; Mr. J. AGATE, Brookthampton Nurseries, Havant, was 2nd. For twenty-four blooms, in not fewer than twelve varieties, Mr. E. BROWN, jun., 3, New Alma Road, Southampton, won easily with large fresh flowers.

In the amateur class for twelve varieties, Japanese, Mr. T. WILLIAMS, Southsea, was the best exhibitor.

Table decorations and baskets of Chrysanthemum were numerous and good. Miss K. TURNER was an easy 1st in both competitions.

Mr. W. CHESTER, gr. to SIR W. PINK, Sherwood Hall, Costam, won the premier award for a group of Chrysanthemum and foliage plants. Mr. AGATE was 2nd.

Japanese Chrysanthemum Violet Lady Beaumont was shown by Mr. N. MOLYNEUX, Rooksbury Park Gardens, Eardun. In colour it much resembles Edwin Molyneux, and the flower is of full size.



ACACIA: *Acacia*. What is seen in the florists' shops in the spring months is *A. dealbata*, a species largely grown about Grasses and Nice, and other parts of Southern France, as bushes in the open air. *Acacias* do not bear much forcing, nor do the French gardeners practice forcing. *A. dealbata* is a plant of large growth, quite unfitted for cultivation in an ordinary greenhouse.

AMELIANS: *Roseley*. We can only say "found dead." We conjecture that there may have been something wrong at the root.

APPLES: *E. D. O.* Cox's Orange Pippin, is attacked by the *Fasciellidium dendriticum*. Tower of Glanis seems to have been injured by a hailstone or some other missile, or perhaps by a bird; we see no fungus.

BOOKS: *F. E. L. My Gardener*, by H. W. Ward, is a book that will fulfil all your requirements, both vegetable and floral. It is published by Messrs. Eyre & Spottiswoode, East Harding Street, London, E.C. In regard to fruit cultivation, you should get *C. Bunyard's Fruit Farming for Profit*, published by F. Bunyard, Week St., Maidstone.

COCKROACHES: *J. McC.* The beetle-paste of

the oil-shops is pretty effectual in destroying these pests.

FUNGUS: *Roseley*. A poisonous puff-ball—not an Agaric. The only way to get rid of it is to remove the soil and char it.

GRAPES PLACED IN WATER IN ZINC TROUGHS: *Grower*. The acids present in the shoots might have a deleterious effect, and we should rather prefer glass or earthenware receptacles. It seems certain that owing to the much larger evaporating area of the water in troughs as compared with that of wine-bottles, the Grapes would be more liable to be affected by mould, and the loss of berries greater. The horticultural sundriesmen may keep the kind of troughs desired, or you might get a tinsmith to make them.

GRUBS ON CYCLAMEN: *W. D.* The grubs of a species of weevil. Turn out the plants, pick out the grubs, and replot in fresh soil.

* **NAMES OF FRUITS AND OF PLANTS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: *W. C. A.* The ripe condition of the fruit reserved enabled us to distinguish it as Princess, a seedling obtained by the late Mr. Rivers of Sawbridgeforth, from Louise Bonne of Jersey.—*A. B.* J. Tombeau; 2, Durondeau; 3, Merville d'Liver; 4, Henkel d'Liver; 5, Fondante de Siedler. The Apple is Yellow Ingestre.—*F. E. H.* 1, Dr. Loutier; 2, Suppasse Virgouliou; 3, De Marre; 4, Duchesse d'Orléans; 5, Walhurst Pippin; 6, Gendebien.—*W. W.* 1, Grandier, it is affected by the Scab-fungus; 2, Beauty of Kent; 3, Gogar Pippin; 4, rotten; 5, Winter Strawberry; 6, Kerry Pippin.—*A. B.* The large Pear is Durondeau; the smaller one is Bergamotte Buté. The Apple is a good example of a twin-fruit, and such combinations have been frequent this season, where the fruits have been closely crowded on the branches. A variety in which this occurs commonly was named the Bedfordshire Twin some years ago, but the character is not constant.—*J. M.* You give no name or address. 1, Brown Beurré (small); 2, not known; 3, Autumn Bergamot; 4, Duchesse of Oldenburg; 5, Nonsuch; 6, Golden Winter Pearmain.—*Bourne*, 1, Easter Beurré; 2, Winter Nelis; 3, Glou Moreau; 4, Bergamotte de Jodoigne; 5, Cornish Gilliflower; 6, Carlisle Codlin.—*C. W. H.* Cobham.—*C. H. S. P.* The red Apple is Calville Maline; the other is Sugar-loaf Pippin.—*F. T. M.* Beurré Jean Van Geert. It is a dessert Pear, but it varies greatly in merit, and is sometimes of indifferent quality. Many such Pears can be used with advantage in an unripe state for stewing.—*R. L.* 1, Hunthouse; 2, Minchall Crab; 3, Lewis's Incomparable; 1, not recognisable; 5, Boston Russet; 6, Ecklinville.—*T. W. C.* 1, Cogle's Pippin; 2, Round Winter Nonsuch.—*Kyle*, 1, Tower of Glanis; 2, Melrose; 3, Blenheim Orange; 4, Rhode Island Greening; 5, Yorkshire Greening; 6, Court Pendu Plat. The basket is, as an exceptional favour, returned as desired, but we cannot under any circumstances return fruits sent for names.—*O. W. G.* 1, Beauty of Kent; 2, Lewis's Incomparable; 3, Cobham; 4, Dutch Mignonne.—*W. W.* It is a bad case of "cracking," due to the attacks of the Scab-fungus. Spray with Bordeaux Mixture, as repeatedly advised in these columns. It would also be desirable to remove the hot-bed if it can be done conveniently.—*R. C.* Durondeau; see reply above with regard to cracking.—*Hersford*. Diminutive fruits from stunted trees are not the specimens to send for names.

Possibly the Apple is a local variety, otherwise it is not in character, and in consequence is unrecognisable.

NAMES OF PLANTS: *G. F.* *Cestrum aurantiacum*—*A. T. C.* 1, *Abelia rupestris*; 2, *Manettia bicolor*; 3, *Ancinidietyon Phyllitidis*, one of the so-called Flowering Ferns; 4, *Asplenium marinum*; 5, *Pteris cretica albo-lineata*; 6, *Cyrtium falcatum*; 7, *Adiantum formosum*; 8, *Asplenium bulbiferum biflorum*; 9, *Pteris tremula*; 10, *Pteris serrulata cristata*; 11, *Ophiopogon Jaburan*; 12, *Pteris serrulata*.—*Fairlawn*. 1, *Selaginella cressa*; 2, *Begonia incarnata*; 3, *B. metallica*; 4, *Glechloma hederacea variegata* (Variegated Ground Ivy); 5, *Begonia argyrostigma*; 6, *Ruellia Portellae*.—*J. H. L.* A good variety of *Cattleya labiata*, generally known as the autumn-flowering *C. labiata*.—*A. L. T.*, *Aberdeen*. 1, *Odontoglossum crispum*; 2, *O. Lindleyanum*; 3, *O. grande*.—*Morgate, Brittany*. 7, *Salsola Kali*; 8, *Cakile maritima*; 9, *Muscari racemosum*.—*S. P.* A hybrid Oak from *Q. cerris*, perhaps a form of the Lacombe Oak, but we are not sure.—*P. M.*, *Notts*. *Polygonum cymosum*, English Knotweed.—*W. G.* *Rhus Toxicodendron*; see letter from Tasmania in a recent issue, p. 293.—*H. W.* 1, *Ailanthus glandulosa*; 2, not recognised; 3, *Phillyrea laetifolia*; 4, *Alnus imperialis*; 5, *Phillyrea angustifolia*; 6, *Phillyrea media*.—*C. H.*, *Birmingham*. 1, *Sempervivum urbicum*; 2, *Sempervivum arborescens*; both requiring protection in winter.—*C. H.* *Selaginella Wildenowii*, and *Pteris argyrea*.

NOTICE TO QUIT SERVICE: *H. S.* Yes, to all your questions. Notice should be given on the usual pay-day.

OPUNTIAS IN THE OPEN AIR: *J. W.* The following are some of the species of *Opuntia* which will succeed in this country in the open air, if planted on a raised rockery in a warm, sunny position, and protected in the winter by means of portable lights:—*O. Rafinesquii* and var. *arkansana*, *O. vulgaris*, *O. brachyarthra*, *O. Pieloniimiana*, *O. humilis*, and *O. missouriensis*.

PARROT-TAILS AND NARCISSUS BICOLOR EMPEROR: *J. M. & Sons*. Fine examples, the *Narcissus* more especially.

PROLIFEROUS PEAR: *J. C. W. & Co.* Not uncommon, many such cases have been figured in *Gardeners' Chronicle*, one quite recently.

SCALE ON PALM-LEAF: *J. McClelland*. See a full answer on this subject at p. 300, col. c of *Gardeners' Chronicle* for October 19, 1901.

SHOW BOARDS, &c.: *G. R.* If you will kindly furnish us with your full name and address, we will put you into communication with a person having show boards, cups, &c., to dispose of.

ST. BRUNO'S LILY: *S. P.* This plant is botanically *Anthericum Liliatum*.

COMMUNICATIONS RECEIVED.—A. Workshop—*G. K.* Next week—*T. A. B.*, next week—*J. G.*, *J. B.*, *P.*, next *C. S.*, *J. H.*, *W. G. H.*, *F. J. R.*, *Wetherby*—*F. B.*, *G. K.*, *L. T.*, *Linnæus Societies*—*E. F. C.*, *G. A.*, *T. M.*, *F. W.*, *C. H. F.*, *D. R.*, *C. E. F.*, *J. Veitch & Sons*—*E. H. J.*, *S. A.*, *A. B.*, *T. H.*, *S. W.*, *J. G.*, *Comte de K.*, *Ghent*—*W. B.* 11—*Prof. Penhallow*, Montreal.—*Prof. Glig*, Berlin.—*W. R.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*T. H. S.*

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

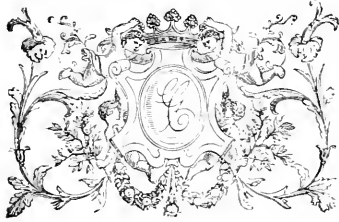
8½ TREBLED. 8½

Advertisers are reminded that the "Chronicle" circulates among Country Gentlemen, and all classes of a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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



VIBURNUM MACROCEPHALUM IN THE NURSERY OF MR. J. RUSSELL, RICHMOND.



THE
Gardeners' Chronicle

No. 776.—SATURDAY, NOV. 9, 1901.

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PLANTS WHICH BURY THEIR SEEDS.

THE care and solicitude which many plants betray in the disposal of their seeds is almost paternal, and meets us at every botanical turn. Among the numerous devices which have been adopted for securing their safety, I select one for present treatment. Let us examine a few of the plants which carefully bury their seeds while they are still attached to the stem from which they grow.

Our first instance may well be the familiar little Toadflax with Ivy-like leaves, found in some parts of England on every old wall and ruin. This modest little *Linaria* is nearly related to the Toadflax with yellow flowers, known in many places as *Butter-and-Eggs*. A still more dignified relative is the *Snapsdragon* or *Dragon's-mouth*, whose lower lip may be made to open and shut. How we used to gaze and wonder in the years gone by as a big bee alighted on this blossom, slipped inside, and was lost to sight. Not less intense was our astonishment when, after waiting awhile, we saw the bee return to the outer world, and instantly seek another prison-house. We

now know that a double game was being played, and that while the strong-jawed *Snapsdragon* was supplying the bee with sweets, it was also loading it with pollen for the fertilisation of other plants.

The Ivy-leaf Toadflax, I have said, grows chiefly and by preference on walls. It delights to root in chinks and joints, crevices and holes, and throws out its pretty, verdant sprays that it may effectually mantle over the unsightly blocks of masonry, and the ruins which would otherwise be an eyesore. It effects this in a very ingenious way. When the flowers have been fertilised and the seeds set, the stalk which carries the seed-vessel begins to curl round and feel for a crevice in the wall. If an opening can be discovered it secretes itself here, ripens its seeds, and eventually deposits them in the chink or hollow that they may germinate in the ensuing spring!

We have among our native plants a yet more wonderful illustration of the pains which may be taken to bury the seed. Only a few days ago, as I was walking along an old embankment near the sea, I found the turf whitened by the tiny blossoms of the subterranean *Trofoil*. As Sir John Lubbock (*Lord Avebury*) has given an account of this plant's device for sowing its seeds, I quote his words in preference to writing a new account: "Among terrestrial species there are not a few cases in which plants are not contented simply to leave their seeds on the surface of the soil, but actually sow them in the ground. Thus in one of our rarer English Clovers (*Trifolium subterraneum*) only a few of the florets become perfect flowers; the others form a rigid, pointed head which at first is turned upward, and as their buds are close together, constitute a sort of spike. At first, I say, the flower-heads point upwards, like those of other Clovers; but as soon as the florets are fertilised, the flower-stalks bend over and grow downwards, forcing the flower-head into the ground, an operation much facilitated by the peculiar construction and arrangement of the imperfect florets. The florets are, as Darwin has shown, no mere passive instruments. So soon as the flower-head is in the ground, they begin, commencing from the outside, to bend themselves towards the peduncle, the result of which, of course, is to drag the flower-head further and further into the ground. In most Clovers each floret produces a little pod; this would in the present species be useless, or even injurious, many young plants growing in one place would jostle and starve one another. Hence we see another obvious advantage in the fact that only a few florets perfect their seeds."

Everyone is aware that various *Trofoils*, *Clovers*, and allied plants are exceedingly quick to respond to atmospheric stimuli, supplying us with illustrations of such phenomena as sleep in plants, and hygrometric contractions; but few, save the practical botanist, are aware that such a carefully laid plan as this is regularly carried out by ten thousand plants every year. If we examine the older botanical works, we shall find that botanists of a former generation were greatly puzzled by these phenomena, and made numberless mistakes in their attempt to describe and explain them. Some failed to recognise that the white filaments mixed with the blossoms were themselves flowers. While one asserted that they penetrated the

earth, another affirmed that they merely rose upwards, "their ends expanding into little star-like points, till they finally enclose the seed-vessels in a kind of prickly head." Withering remarked nearly a century ago that, "there is something so singular in this plant, that its economy merits further enquiry. The strong, horny, stellular substance" (as he calls the florets that make the shroud of the seeds), "which grows from the extremity of the fruit-stalk, stretching its ray outwards and downwards, encloses and presses the capsules to the ground, thus partially burying them."

Another of our common English plants will supply us food for thought, if we will examine it. I refer to the *Violet*. If this flower be carefully looked into after the blue blossoms of spring have disappeared, it will be found that a new set of flower-stalks has come into existence. Instead of thrusting their heads into the open air, however, they keep themselves as retired as possible; and having fertilised their ovules without the mediation of insects or outside agency, they proceed to bury their capsules near the parent plant. These curious cleistogamic flowers, of which our flora has numerous examples, must receive fuller attention at another time. Meanwhile let it be observed that the *Wood-Sorrel* and *Violet* each proceed on similar lines in this device.

It may be of interest if we now take an excursion to some foreign clime to see if anything similar to this English usage is to be found abroad. We shall be able with a little care and patience to turn up several well-known cases. I refer in the first place to the *Ground-nut*, or *Monkey-nut*, which we can purchase in the shops—an oily seed, of which many young people are very fond. This plant (*Arachis hypogea*) grows freely in the West Indies, as well as in the far East. The flower resembles that of a *Pea*, but the calyx which encloses the blossom is elongated. At the base of the flower, close to the stem, is the ovary, or seed-vessel, which undergoes a curious change as the plant advances towards perfection. After the flower has set its seed and withered away, the young oval pod, still very minute, begins to move forward from the stem by the growth of a stalk which has hitherto been invisible. This stalk becomes several inches in length, and as it develops it curves downwards so as to carry the seed-vessel to the ground. Once the pod has become securely fixed underground, it begins to grow, and produces two large seeds. If, however, it should fail in its attempt to burrow, it soon perishes, and no seed is secured. The whole life-history is so wonderful that if it stood alone one might well be excused for doubting the correctness of the observations.

It is easy, however, to show by numerous other illustrations that this habit of burying their seeds is by no means confined to these few examples. And as some special end must be kept in view by the plants which resort to such unusual devices, we may allude, in passing, to one or two other cases. Perhaps no group of plants shows a greater facility for planting its own seeds than the *Vetches*. Some of these are ingenious enough to produce two kinds of seed-vessels. The seeds of the one form are borne in pods, which burst above ground, and scatter their produce far and wide. The others resemble

the ebi-stogamic forms, which we find in our Violet and Wood-sorrel, and barrow in the ground. If we find the words "subterranean" or "hypogean" attached to the names of plants, we may be pretty sure it means that they bear seeds which bury themselves. The words both mean "under-ground."

In Brazil there grows a Crucifer which is very nearly related to our Lady's Smock and Bitter Cresses, which has adopted this device, and in other lands there are other examples, which I do not further specify because they have no popular English names, are not of great economic value, and are known only to the student of botany and plant-love. Here, then, are the facts: In England and various other parts of the world, sundry Vetches, Trefoils, Violets, Cresses, and other more or less familiar plants, bury their seeds. Sometimes, as in the case of the subterranean Trefoil and the Ground-nut, there is only one kind of fruit produced, and this underground. At other times the fruit is produced by two very different kinds of flowers, the one being adapted for cross-fertilisation, the other being entirely independent of outside agency. It usually happens in the case of the English Violets that those plants whose flowers are readily fertilised by insects rarely have underground flowers, while the sweet and the hairy Violets, whose blue flowers seldom set their seeds, depend almost entirely on their subterranean forms. *A. Sasser, Naturalist.*

(To be continued.)

THE WALNUTS.

JUGLANS.—Out of the ten or twelve species of Walnut that are known to exist, there are, at the present time, eight in cultivation. But of these only two—the common and the black Walnuts—can be said to be well known, although there are others which promise to be equally or even more striking as ornaments to the garden and park. The leaf and flowers of one of them, a little-known Japanese species, was figured in a recent Supplement (October 19).

The value of the Walnuts, regarded as ornamental trees, consists chiefly in the size and beauty of their foliage. The common Walnut is, in this matter, one of the least striking in the genus. In the Walnuts of eastern North America and north-eastern Asia, the leaves are often 3 feet long on young cultivated specimens. The size is, no doubt, reduced in fully-grown trees, but after allowance is made for that, they remain some of the most remarkable of the large trees that can be grown out-of-doors in this country. In *Juglans cordiformis*, and in some of its allies, the drooping catkins are an additional attraction in spring. The leading characters of the *Juglans* are to be found in the deciduous pinnate leaves, in the unisexual flowers (both sexes occurring on the same plant), and in the fleshy fruit enclosing a hard-shelled, two-valved, frequently edible nut. All the cultivated species come from the northern hemisphere, but two or three other species are to be found south of the equator, in Venezuela and Peru. The following is a list of the species in cultivation:—

ASTATE	NORTH AMERICAN
cordiformis	californica
mandshurica	cinerea
regia	nigra
Sieboldiana	rupestris

Several hybrids have been raised chiefly by chance—*alata* (*cinerea* × *regia*), *pyramifolia*

(*nigra* × *regia*), *Vilmoriniana* (*nigra* × *regia*). Mr. Luther Burbank, of Santa Rosa, California, has crossed *nigra* with *californica*.

Of the cultivation of the Walnuts, it need only be said that they should, when possible, be raised from seeds, and put in their permanent positions as soon as possible. The nuts, too, should not be allowed to get dry before sowing. Being gross feeders, they like a rich, moist soil. They are apt to be cut by spring frosts, and to become bushy-topped in consequence; thus it often becomes necessary to keep the young trees to a lead in order to obtain shapely specimens.

J. CALIFORNICA.

Young trees under this name are in cultivation at Kew, but little can be said as yet of the value of the species as a hardy tree in this country. According to Sargent, who figures it in the *Silva of N. America*, t. 337, the species was discovered by Dr. C. C. Parry in 1850, and is a native of the coast region of California. Cultivated specimens resemble *J. rupestris* as regards foliage, the leaves consisting of fifteen to nineteen leaflets, which are 1½ in. to 3 in. long. Like *J. rupestris* also, it is sometimes shrubby, although it is found in a wild state sometimes 40 ft. to 60 ft. high. The bark of the young branches is covered with minute scales. *J. rupestris* is, no doubt, its nearest ally; but the nut of *J. californica* differs in being only slightly furrowed, whilst that of the former is deeply so. The leaf divisions also appear to be more numerous in *J. rupestris*.

J. CINEREA (BUTTER-NUT).

Although introduced in the seventeenth century, not long after the Black Walnut, this species has never become anything like so common in English gardens and parks as the latter. It has often been confused with it, but as a comparison of the descriptions here given will show, the two are readily distinguished when in leaf, and even better when in fruit. I do not know of any trees that equal in size the specimens of the Black Walnut that are frequently seen, but young trees grow with equal vigour, and are of equal beauty. It is described as growing 100 feet high, with a trunk 2 feet to 3 feet in diameter in the North American woods. It has usually a smaller number of leaflets than *J. nigra*, but they are broader at the base, and together with the leaf-stalks and young wood, are covered with brownish down, especially beneath. Fruits have been borne in Britain, but not frequently; they differ from those of *J. nigra* in being ovate (not globose), and in tapering to a point at the top. They occur, moreover, sometimes three or five in a cluster, whilst the Black Walnut has them singly or in pairs. Each fruit is over 2 inches long when fully grown. The kernel is very full of oil, and soon becomes rancid.

J. REGIA, COMMON WALNUT.

There are several varieties of the common Walnut grown for the varying qualities of the nuts; and, as is the case with all long-cultivated trees, there are several which vary also in foliage and in habit. The most not-worthy of the latter is the Fern-leaved variety, now generally called *laciniata*, but also known as *filicifolia* and *heterophylla*. In this variety, the leaflets are handsomely lobed and cut. A curious variety called *monophylla* has the leaflets reduced to one very large one and a pair of small ones, and sometimes even the latter are absent. A variety with a weeping habit (*pendula*) is also in cultivation, but has no special merits as an ornamental tree. Var. *maxima*, a valuable nut-bearing sort (the nuts being perhaps twice the ordinary size), is

striking also because of its larger leaves. The Walnut is a native of the region between the Caucasian and Himalayan Mountains, and has been cultivated in Britain for many centuries, probably from the time of the Romans.

J. RUPESTRIS.

From all the other species of Walnut in cultivation, except possibly the little-known *J. californica*, this is very distinct because of its dwarf, almost shrubby habit, and small, finely-cut leaves. It was discovered in Western Texas by Berlandier in 1835, but does not appear to have been in cultivation (at least in any quantity) till thirty or for years later. It is still one of the rarest species of *Juglans*. The leaves, although often not more than 6 or 8 inches long, will consist of as many as eleven and a half pairs of leaflets, these being narrow-lanceolate, shallowly toothed, and 1½ to 3 inches long. The fruits, so far as I know, have not been borne in this country, but on American specimens they are spherical, and about ½ inch in diameter. One of the finest specimens in this country is in Lord Ducie's garden at Tortworth; such is the plant I have hitherto known as *Juglans rupestris*. It was grown by the late M. Lavallée as *J. fruticosa*. The other day, however, when accompanying Canon Ellacombe round his wonderful collection of shrubs at Bitton, he pointed out a Walnut as *J. rupestris*, with much larger leaves and more vigorous growth, apparently quite distinct from the above. On consulting the *Silva of North America*, however, I found what is no doubt Canon Ellacombe's plant figured as *J. rupestris* var. *major* (of Torrey). The following excerpt from Prof. Sargent's work will show how the two differ:—

"The eastern and western forms of *Juglans rupestris* seem sometimes like distinct species, but in the extreme western parts of Texas and in North Mexico the two grow together and appear to pass one into the other. The Texas (or eastern) form is distinguished by its smaller size, by its narrower, more glabrous, and more finely serrate leaflets, which are often nearly sessile, and by the small, globose, glabrate fruit and very thick-walled nut, inclosing a kernel often scarcely larger than a pea. The western form is a large tree with broader and more coarsely serrate, stalked leaflets, usually pubescent on the lower surface, larger fruit coated with rufous hairs, and more deeply sulcate, nut with proportionately thinner walls and larger kernel." (*Silva*, vii., p. 126.) The small-leaved or typical form seems to be the most distinct and desirable.

J. SIEBOLDIANA.

This is the common Walnut of Japan, and its nuts are as important an article of food in that country as are those of *J. regia* in Europe; they are thin-shelled, and borne in racemes. It is a tree 40 to 50 feet high, with handsome leaves similar to those of the *Juglans cordiformis* recently figured. The nuts, however, are not flattened as in that species. It was introduced to Europe by Siebold about the middle of the nineteenth century, but is not a common tree. Possibly *J. Sieboldiana*, *J. cordiformis*, and *J. mandshurica* are but forms of one species differing mainly in their fruits. As regards foliage and habit, I have not been able to detect any reliable character to differentiate the young, cultivated specimens. *W. J. B.* [The last two issues of the *Gardeners' Chronicle* have contained articles by Mr. Bean on various species of *Juglans* that we were enabled to illustrate, and the article, now published in full, deals with the remainder of the species. ED.]

NURSERY NOTES.

CHRYSANTHEMUMS; MR. GODFREY'S, AT EXMOUTH. The annual display of Chrysanthemums in the Claremont Nursery of Mr. W. J. Godfrey, at Exmouth, is always worth a visit. In a large and lofty span-roofed house, 160 ft. long and 30 ft. wide, there is grouped a collection that may be said to eclipse all of Mr. Godfrey's previous displays. The middle of the house is entirely filled with plants ranging from 2 ft. 6 ins. to 4 ft. in height, the sides being

immense bloom of great breadth and depth; it was awarded a F.C.C. by the National Chrysanthemum Society on October 8. This variety produces the richest colour from the first crown natural break; later buds showing more bronze. Godfrey's Pride is claimed to be the largest bloom in the house, and the largest variety grown; it is claret-erimson in colour, and comes good from any bud, but best from that known as the second crown. Exmouth Crimson is a novelty of that colour, remarkable for its stout flower stems; awarded a certificate by the N.C.S. on October 21.

Japanese reflexed of large size, which the raiser claims to be the finest of its colour. Nellie Stevens is pale salmon, overlaid with rose, flower very distinct and large; the plant is 4 feet in height.

Godfrey's Masterpiece is perhaps the best of the varieties under notice, and was conspicuous from any part of the house; the blooms are of great depth, with broad incurving florets; colour indian-red, with gold reverse; it is remarkably free, and all blooms come good from any bud—this variety has been awarded Certificates by the Royal Horticultural Society,



FIG. 103.—VIEW IN MR. W. J. GODFREY'S CHRYSANTHEMUM-HOUSE, OCTOBER, 1901.

filled with plants a trifle taller, and nearly all of them are seedlings raised on the place. Immediately upon entering the house it is seen that the blooms are of very even quality throughout the whole collection, and the sturdy growth and stout, leathery leaves of the plants testify to the good constitution of the numerous varieties.

Among so many new seedlings there is plenty of choice, and Mr. Godfrey has made a selection for sending out in the spring of 1902, which he claims to be far in advance of any varieties hitherto offered. These include the following:—Sensation, of a rich golden colour, shaded bronze, broad petals, slightly drooping, an

Queen Alexandra, which has also been certificated, is a colour much prized; it may be described as fawn shaded with carmine-rose. Bessie Godfrey is a great advance on Mme. von André, being a canary yellow-coloured bloom of much greater depth than that variety; certificated by the N.C.S. on October 21. Wilfrid H. Godfrey possesses a fine constitution, and the flowers are of great depth, with broad, incurving florets of rich crimson colour, with old gold reverse. Exmouth Rival, as seen, does not grow more than 3 feet in height—the flowers are of a rich crimson colour, slightly shaded towards the centre with maroon; a perfect

and the National Chrysanthemum Society. Wallace E. Vowden is a Japanese flower with florets incurving at tips, inside rose coloured, chamoison the reverse. A First-class Certificate was awarded the variety by the Royal Horticultural Society in 1900, the bloom having been cut from the seedling plant.

H. E. Hayman is a pleasing colour, of a soft apricot tint, shaded rosy bronze. The King is reddish-erimson, with pure gold reverse, with much of the form of Chenon de Loché, but with longer florets; it is so sturdy in growth that it hardly requires staking; 4 ft. 6 in. in height. Golden Eagle is of a soft amber yellow, outer petals shaded carmine-pink, a flower of the

build of Madame Carnot, but with longer florets; a plant noticeable for its strong constitution. Godfrey's Triumph may be best described as a crimson Chénon de Leché; it was certificated by the National Chrysanthemum Society and the Royal Horticultural Society.

Of decorative varieties, Dazzler is a bright crimson reflexed flower. Delightful, a good yellow variety, with thread-like petals, but broader than the ordinary thread varieties; a very attractive flower. Kimberley was raised and sent out in 1900; it is a large Japanese flower, golden yellow in colour, and very distinct.

Of varieties obtained from other sources, Loveliness, an Australian introduction of last year, is very good; colour canary-yellow, with fluted florets resembling some of the hairy varieties. Phyllis, another beauty from the Antipodes, is a large deep bloom, of bronze-yellow colour.

Of continental sorts, Calvat's Sun is a promising variety; colour canary-yellow. These sorts, however, lack the constitution, sturdiness, and solidity of bloom noticeable in the Exmouth Seedlings.

The cross fertilisation and seed saving is done by Mr. Godfrey. He aims at producing a large flower, refined in appearance, bright in colour, dwarf of habit, with good constitution—qualities that are very apparent in the seedlings. His results do not bear out the arguments put forward by some raisers. He has found that two reds will produce other reds, "like sometimes produces like," but not always. He has not a white, nor a purple-mauve, or lilac-rose colour among this batch of seedlings, while coarse rough blooms and poor growers are conspicuous by their absence.

COLONIAL NOTES.

WEST INDIES.

GREEN-MANURING.—From the Imperial Department of Agriculture for the West Indies comes a pamphlet containing a summary of experiments carried on under the auspices of the department with manures and Leguminous plants at the Sugar-cane Experiment Stations at Barbados from 1898 up to the beginning of 1901. The object of the trials was to ascertain the comparative value of Leguminous plants as animal fodder and as green dressing on land to be planted with Sugar-cane. The Bengal Bean (*Alouca pruriens*, var.) seems, on the whole, to have given the best results. We read that:—"Comparison of the best of the Leguminous plants with a good application of farmyard-manure shows that the former cannot be employed as a substitute for farmyard-manure. The latter supplies four times as much organic matter, two to three times as much nitrogen, six to eight times as much phosphoric acid, and six to eight times as much potash as does the Bengal Bean. Consequently the use of a Leguminous snatch-crop will be as fodder to the plantation animals, when it will help to add to and enrich the farmyard-manure heap; or, if it be turned directly into the ground it should be an addition to and not a substitute for farmyard-manure. The special value of a Leguminous snatch-crop compared with others lies in the fact that the nitrogen is, at all events in part, obtained and stored up from the atmosphere. From this point of view, and on the assumption that the Bengal Bean obtained all its nitrogen from the atmosphere, it represented a manual application of 120 lb. of nitrogen per acre, worth about eight dollars as a manure."

BEES.—Another pamphlet from the Department deals with "Bee-keeping in the West

Indies," and is by W. K. Morrison. Bee-keeping is said to be one of the most promising of minor industries in certain districts, and much is now being done to encourage it. A Bee-export who has visited the several islands here gives the results of his investigations, and it is to be hoped that the industry will be largely and wisely taken up.

JAMAICA PINE-APPLES.

In an article in the September *Bulletin* of the Botanical Department, Jamaica, on "Economic Plants," there are some interesting details relating to the cultivation of Pine-apples. Speaking of the best varieties of these fruits, the writers, Messrs. William Fawcett and W. Harris, quote the Superintendent of Hope Gardens, who, in his report for 1896-97, "draws attention to the markings on the leaf of the Green Ripley Pine-apple, and points out that by carefully studying these markings, plants producing poor and generally worthless fruits may be detected at an early stage of their growth, and discarded. The Green variety has a pale green leaf, with red stripes situated on different parts of the leaf, the stripes being very pronounced in some plants, varying from a dark red stripe an inch in diameter to none at all. As far as observations go at present, it is only when the Green variety has the broad red stripe, and that situated in the centre of the leaf, that the plant is worth growing; the totally green-leaved plant, or the plant with a narrow stripe, especially when the stripe is on the edge of the leaf instead of in the centre, is not worth anything, the fruit produced usually having holes near the base into which ants creep, and by eating the fruit, start it rotting." Continued tests proved the correctness of the theory that the quality of the fruit is indicated by the colouring of the leaves, and it is now particularly insisted upon that "the greatest care should be taken to propagate plants from those having the red colouring matter well developed, and in the centre of the leaves only; plants with faintly-coloured or colourless leaves, or plants having leaves with the red colour on the edge of the leaves, should be avoided."

It is curious to note, from a table of Pine-apples exported yearly since 1876, how the numbers and values of them have varied. The smallest number sent out was thirty-three in 1877, the largest 14,070 in 1881; while the total in 1900-1901 was 7,511, the value of these being estimated at £1,033.

PITHECOLOBUM SAMAN.

(THE SAMAN TREE OF TRINIDAD, GRENADA, ETC.)

Recently, in looking through a copy of the *Exchange Seed List* for 1901, compiled by Mr. G. H. Krambiegel, the Superintendent of the State Gardens, Baroda, India, I noticed that a yellow-leaved *Pithecolobium Saman* is included. This form is uncommon, at least, in this island, but at Gouyave (Charlotte Town) the chief place of importance in the parish of St. John's, there are two trees, one near the police-station, and the other at the "old hospital." In my diary of April 11, 1900, I made the following note:—"Near the police-station at Gouyave there is a yellow-tinted foliage and vigorous-growing Saman-tree; there is, or was, a similar one at the 'old hospital' of the same town." Dr. Latour first pointed out the latter to me, so that if deserving of varietal distinction, his name should have due consideration. I have nowhere seen this form before. Again, on May 17 of the same year, I noted:—"The Saman with yellow-tinted leaves near the police-station (Gouyave) I found in vigorous health, and clothed in foliage."

ELI DENDRON OF ADRANG-LATUM.

This Brazil tree is here noticed on account of the bright, fresh-looking, dark green leaves it has during a period of the year when nearly every other plant looks shabby. Trees of this nature, like the Mango, stand out a splendid contrast with their clothing of greenery. There is one specimen in the collection of living trees and shrubs cultivated at the Grenada Botanic Station, W. E. Broadway, Grenada.

PEONIES.

The Peony is a delicate plant, and is cultivated in long, sheltered beds, generally forming the parterre to some adjoining chamber, from which its magnificent blossoms can be viewed. In the grounds of the wealthy it is subjected to scrupulous care and nursing, in order to produce flowers of enormous size and fullness, often so large and heavy as to need artificial support. It is regarded as the flower-queen of China, and is essentially the favourite of the upper classes in Japan. The Peony was first imported into Japan in the eighth century, and was then chiefly cultivated in the provinces of Yamato and Yamd-shiro. Even now the finest specimens in Tokio are brought from the neighbourhood of the old capital, Nara. The largest blossoms measure as much as 9 inches across. The Peony is sometimes called the flower-of-prosperity; another fancy name by which it is known is the plant-of-twenty days, because it is said to preserve its beauty and freshness for that period of time. Of the large Tree Peony, called 'botan,' there are ninety distinct kinds, and of the small plant Peony, having single blossoms, and called 'Shakuyaku,' there are said to exist 500 varieties. . . . Among colours, the red and white are most valued, purple and yellow specimens, though rare, being less prized. This exuberant flower, with its large, curling petals, is a favourite subject for design and decoration. Its companions in art are the peacock, the golden pheasant, and the 'shishi,' a kind of conventional lion, derived from Chinese designs; in such company it forms the constant decoration of temple and palace walls." *The Floral Art of Japan*, by J. Calder, p. 11.

ORCHID PROPAGATION.

THE "BACK-BULBS" OF ORCHIDS.—With regard to Mr. Johnson's remarks (p. 328) respecting my article, "Orchid Propagation," (Oct. 19, p. 258, in the first part of the paragraph he expresses the belief that there is "a certain amount of risk" in removing back-bulbs, and illustrates the danger by particulars of the death of a specimen which had been to a flower show, was brought home, divided, and which died within two months. This proves nothing, for the damage may have been set up by its being exposed during the showing, or by over-watering afterwards. But as I hold still stronger views about the safety of dividing an Orchid, almost bulb from bulb, it needs be, and I intend to furnish an article on the subject soon, that part of the question may remain.

The second portion contends that, affording water to the back-bulbs from the start is better than dry treatment. As Mr. Johnson in his manipulation of the plants "takes no risks," but takes only pieces with good dormant eyes, and as he suspends his divisions, and I know applies water very carefully, his methods are satisfactory to him.

But my purpose is not to know what treat-

ment may answer in favourable cases, but that which is best in unfavourable and seemingly hopeless cases, and when that is ascertained, that which is best generally has been found. I should have thought that the account of Mr. Norman C. Cookson's dry treatment of back pseudo-bulbs of *Odontoglossums*, whereby he brings about almost to a certainty what Mr. Johnson says he would regard as a miracle under his system, is conclusive evidence as to which treatment is the better. The fact of it is, those who advocate the application of water to rootless back pseudo-bulbs base their argument on an operation they think they are performing rather than on anything which really takes place, for if the piece under treatment has neither imbibing roots nor leaves in active growth, what benefit can it derive from the water? The argument is, that the water keeps the pseudo-bulbs plump until growth is renewed. But to what extent that takes place is an open question. Whether it is desirable for the hastening of growth is a question easier to answer, for those who are observant will have seen many instances in Nature which

weather, and where but for this marvellous provision the plants would perish in large numbers. Many orchidists will have occasionally noted in freshly-imported plants a dead or nearly dead back pseudo-bulb, bearing at its apex a densely set mass, which may be likened to a globular, stemless, dense inflorescence; examined it is found to consist of a number of tiny bulbils, each with a rudimentary awn-like leaf. On the plump pseudo-bulbs these are not observed, and the closest examination does not reveal any means for the production of such a marvellous aggregation of safeguards against the destruction of the plant by long continued drought or other climatic rigours. Again, even with established plants, we find that a great amount of damage is done by the too liberal application of water. Many of my readers will remember the advocacy some years ago of applying water to Cattleyas overhead with a rose watering-pot. It was soon found that plants persistently so afforded water for any length of time made no roots. On the other hand, it is found that if water be sparingly applied while the sit-

MELBOURNE BOTANIC GARDEN.

The Melbourne Botanic Garden, of which we have previously given an account, p. 246, is situated on the banks of the River Yarra, about a mile from the city of Melbourne, and is 106 acres in extent. It adjoins the grounds of Government House and the Public Domain, of which it forms a part. The newer portions, as well as some of the old ground, have been laid out in broad gravel walks, and extensive lawns with clumps and single specimens of trees and shrubs, which have rendered the garden highly attractive to the public, who frequent it in large numbers on Sundays and holidays.

The garden contains large conservatories, one devoted to the cultivation of Ferns and some plants of industrial value; and a miscellaneous collection of stove-plants in pots. A smaller house is occupied by succulent plants. There are also several other small houses for propagating and other purposes, besides frames, and a large shelter shed for the hardier plants.



FIG. 101. BEGONIAS AT SHREWSBURY HORTICULTURAL FÊTE, SHOWN BY MESSRS. B. R. DAVIS AND SONS, OF YEovil.

proves that back-eyes, as they are called, and the scarcely discernible "eyes" which produce adventitious growths on the pseudo-bulbs of *Dendrobium nobile* and other Orchids, which might be classed with Mr. Johnson's miraculous developments, are a provision of Nature intended to guard the plant from destruction when its leading growth is destroyed, or does not push up because of exceptionally long periods of drought. The functions of these dormant eyes are never brought into play unless attenuation steps in, and as the old bulbs decay, the young growths strengthen and form roots in order to absorb moisture when the rain does come. This process we see going on under cultivation, and produced by the same causes, viz., danger to the life of the plant through its vital energies being by some check diverted from their normal course.

But the most marvellous instance of this provision of Nature, one which falls little short of the miraculous, is seen in *Coleogyne (Pleione) humilis*, growing in Nepal and Sikkim at great elevations in a little moss on bare rocks and trees fully exposed to the

pointed roots are forming, a large number of branching roots is obtained; while those subjected to overhead application seldom branched. The reason is not difficult to find. The over-watered plants get more water than they can take up with the few roots which they possess, whilst those sparingly watered have to find more mouths to get sufficient from the smaller available supply.

I am very pleased to find that growers are willing to discuss these matters, and I hope by placing a few more of my views before them that some interesting facts may be obtained, and made common property. J. O'B.

BEGONIAS AT SHREWSBURY.

We present our readers with an illustration (fig. 101) of a group of tuberous-rooted Begonias, shown by Messrs. B. R. Davis & Sons, nurserymen, of Yeovil, Somersetshire, on the occasion of the last horticultural fête at Shrewsbury. Messrs. Davis have done much in raising fine varieties of Begonias, and the group contained many of the best of these.

The older portions of the gardens contain numerous fine specimens of Palms, Araucarias, and other Conifers, various Oaks, Elms, and other deciduous trees, besides *Grevilleas*, of which *G. robusta* forms a splendid picture when in flower, and numerous other native trees and shrubs. An extensive "Ferngully" has been formed; large collections of Palms and Cycads have been planted, as well as groups of the more hardy of the Queensland plants.

In the lower portion of the grounds, near the river, is a large and beautiful lake, occupying about fourteen acres, spanned in places by rustic bridges, and dotted with charming little islands which, planted with ornamental trees and shrubs, picturesquely arranged, produce a splendid effect. A portion of the native vegetation having been allowed to remain, adds to the interest of the scene. A large sum has been spent on the gardens and domain during the last few years, and the sums annually granted by Parliament for the purchase of plants have enabled such an increase in the collections to be made that the total number of plants catalogued some

years since exceeds 7,000 species, exclusive of varieties. The whole of the species are distinctly labelled with name, native country, and natural order. The condition of the gardens is in every way creditable to the City of Melbourne, and especially to its Director, Mr. W. R. Gailloyle, F.L.S.

Adjoining the Botanic Garden is the Domain, 305 acres in extent, including the grounds of Government House, of 157 acres in gardens, pleasure grounds, and extensive lawns, the whole in charge of the Director of the Botanic Garden. The Domain is intersected by walks and drives leading to the city and various parts of the southern suburbs. A small part remains in its natural condition, but the greater portion has been planted with an immense number and variety of trees; these have attained a considerable size, and produce a fine effect on the landscape, the Domain extending within close proximity to, and commanding one of the best views to be obtained of the city."

The foregoing particulars have been condensed from the *Illustrated Handbook of Victoria*, and supplement the account we recently gave from the pen of Mr. J. H. Veitch. The supplementary illustration shows how well Alces and plants of a dry, hot region thrive under the climate of Melbourne.

NOTES FROM NORMANDY.

The export of fruit to this country from the district including Cherbourg has, it appears, been greatly increased of late. In 1899 scarcely more than 20 to 25 tons were despatched here during that period; last year showed a great improvement, the export reached 525 tons—an increase of 500 tons on the previous year. Formerly considerable quantities of Strawberries, grown mostly near Brest, came here *via* Cherbourg, the direct steamer calling at Brest during the Strawberry season, thence direct to Plymouth. Taking the trade fruits of all kinds, i.e., Pears, Apples, nuts, and Prunes grown in Anjou, are mostly exported here through Honfleur and Caen, and a certain quantity passes through Cherbourg. A great deal of this fruit goes to Birmingham and Manchester. Potatoes are grown extensively near Cherbourg. These are packed in small barrels, weighing 88 lb., and shipped to London. The highest export was in 1899, when 3,510 tons were shipped from Cherbourg; in 1900 the export was 2,923 tons. The trade is well maintained. Cauliflowers and Cabbages are largely exported to the United Kingdom, the average price being 1s. per dozen nett. In 1899 some 2,700 tons were exported, but last year only 1,104 tons were shipped. From St. Malo we learn concerning Potatoes and other market garden produce that the trade is improving, and the export here increasing greatly. The sorts mostly grown are Myatt's and the Royal Ashleaf and Early Giant Kidneys. Magnum Bonum has superseded French sorts. Apples yielded a good crop on the whole, and cider will be more like cider than it was during some previous years; it was really difficult to say of what it was made during 1897 and 1899. This reminds us of the alleged saying of a French wine-merchant after a run of bad harvests, that "he would never despair of the yield so long as chemists were left in the land."

TRADE NOTICE.

CERTAIN persons calling themselves nurserymen in Switzerland and in Holland, and addressing their correspondence from Basle, Zurich, and Rotterdam, are, it appears, giving extensive orders in Belgium. The *Chambre Syndicale* recommends its clients to take precautions before sending goods. As it is possible our own nurserymen may receive similar orders, the caution may be useful on this as on that side of the Channel.

The Week's Work.

THE FLOWER GARDEN.

By T. H. SLAVER, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Ornamental Trees.—As a companion tree to the variegated *Acer Negundo* and *Prunus Pissardi*, mentioned last week, *Liquidambar styraciflua* is excellent for affording beautiful leaf-colouring in the autumn. In flowering trees there is still great variety, and almost indispensable are *Laburnum*, *Amelanchier canadensis*, *Amygdalus*, including *A. Davidiana*, *A. alba*, *A. rubra*, *A. persica magnifica*, double and semi-double flowered varieties; *Cerasus pseudo-Cerasus Watereri*, the large double flowers of which are very pretty in the spring, whilst in autumn the leaf colour is good. *Pyrus aucuparia*, *P. Sorbus*, the Service-tree (at the time of writing loaded with berries), *P. Malus acerba*, the common and many exotic Crabs are beautiful subjects given plenty of space as previously advised, and if planted in different aspects as standards, they add much to the beauty of the garden and pleasure-grounds. Then there are the *Spireas* (Lilacs), intermediate in height, undoubtedly very telling subjects if grown as half-standards, with clear stem of 3 or 4 feet in height. The crowns of the standard plants should be kept moderately thin by the removal of useless shoots. A list of the double and single-flowered Lilacs was given when the plants were in flower. Other useful flowering shrubs of a different style of growth are the *Philadelphus*, or Mock Orange. The best forms of these were also noted when in bloom. The older and stronger-growing varieties should have sufficient space to form a good all-round bush, and are good subjects for planting singly or in groups of a few bushes on the lawn. *M. Lemoine's* varieties do not appear so vigorous as the species, and those named *Boule d'Argent*, *Gerbe de Neige*, and *Manifan d'Hermine* seem more suitable for planting near the margins of the shrubbery, or thinly in large beds. *Deutzia scabra*, *D. crenata*, *D. Wellsii*, and *D. Watereri* are useful for late flowering; and the forms of smaller growth, as *D. gracilis*, *D. parviflora*, and *D. Lemoinei*, flower a little before those. Rabbits do not damage the taller growing *Deutzias*, but they are partial to the last-named variety. *Spiræas* of the shrubby type are specially useful in prolonging the season of flowering shrubs. Large specimens of *S. argentea* and *Lindleyana* standing singly on the lawn are extremely effective. *S. callosa pumila alba*, and varieties splendens and superba, are suitable for planting together in beds; while *S. confusa*, *S. opulifolia*, *S. o. aurea*, *S. Thunbergii*, and *S. Douglasii* are useful plants for planting in the front row in shrubberies. *Staphylea colchica* is useful as a quick-growing, early flowering shrub; *Diervilla* (*Weigela*) *Eva Ratkio*, *D. Stelzneri*, and *D. Loysmanni aurea*, the last-named having leaves of a yellow tint; *Elders* with yellow variegated leaves, being of strong growth, are useful in the more distant parts of the pleasure grounds. *Cornus* (*Dog-wood*) *Spathi* is the prettiest of the family, during the summer the leaf colouring being effective; and the varieties *C. kosa* and *C. florida*, and *C. (Benthania) fragifera* are beautiful shrubs, the latter growing to a height of 20 feet in the warmer parts of England and Ireland.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Cattleyas, *Laelias*, and *Laelio-Cattleyas*.—The recent article on the division of pseudo-bulbs of hybrid and choice varieties of Orchids in the *Gardeners' Chronicle*, p. 317, opens up a subject of much general interest, and it will not be out of place to include in my article one or two methods of propagating Orchids that I have found successful at Cambridge Lodge and other gardens. I cannot see the advantage to be derived from resorting to extreme methods, thereby causing the pseudo-bulbs to shrivel or

unnecessarily subject the plants to injury; for it is upon the pseudo-bulb that reliance must be had, generally for the support of the new growth and the future well-being of the plant. I am convinced that extreme measures are altogether unnecessary, and may be dispensed with if the gardener gives due consideration to the species of Orchids to be divided. In increasing the stock of any of the species and hybrids, I always prefer to pass a knife through the rhizome whilst still lying in the compost, when the latter is in such a condition that it may be allowed to remain undisturbed for one season. This severance of the rhizome should be made when growth is dormant, or just when the new growth is beginning at the base of the last-formed growth. The advantages accruing from this method are, viz., that even the oldest pseudo-bulbs will retain vitality in their roots, which are established in the compost and on the sides of the pot, pan, basket, &c., which roots must necessarily be injured by removal, if taken away at the same time the division is made, or when the plant is turned out for re-potting purposes. I have frequently known buds to form where this method is followed, from points well above the base of the pseudo-bulb, where the usual breaks are produced, and where the existence of a bud at the base was not suspected. The divided plant should remain till the roots make their appearance from the newly-developed growth, and then be removed and potted in the usual manner. Where this method is followed, the plants rarely become distressed thereby. There may, however, be exceptional cases, when it becomes necessary to re-pot the plants, and no opportunity is afforded for making a division, when the compost is much decayed or sour. Where this is the case, and back bulbs can be dispensed with, then take them off at the most convenient place where there is the chance of a dormant bud existing, and put up the severed portion and place it at the warmer and moister part of the house; or the piece may be laid on cocoa-nut fibre refuse in a propagating case till it shows signs of vitality. Back pseudo-bulbs of plants recently imported generally possess dormant buds, which keep in good condition for a year or two after being transferred to the Orchid-house, so that the plant has an opportunity of displaying its particular characters, while the back buds are in good condition; and it is by this means that the white forms of the typical species are increased, as is illustrated in the small plants of the white section of *Cattleya Mossiae*. The hybrids of this class retain dormant buds at the base of the pseudo-bulbs for a much greater length of time, and under good cultivation they may be retained in good condition for an indefinite period. It is a great pity hybrids are allowed to continue making single growths annually for so many successive years, when a simple division of the growth would have the effect of producing a large specimen by accretion of growths.

THE KITCHEN GARDEN.

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

Forcing Asparagus.—The crowns selected for this purpose should not be less than three years old, and where home-grown plants are available, care must be exercised when lifting to secure every root possible, and to shake off most of the soil before conveying them to the forcing pit, and not to expose them to the air for a longer period than can be helped. The surface of the hot-bed when the roots are placed therein must not be more than 12 inches from the lights, and the crowns should be packed fairly close together, the roots being spread out level, and at full length, not less than 4 ins. of sifted leaf-soil being placed over the crowns, and made moderately firm. The lights should be kept close till the shoots appear, which is usually in from two to three weeks, then afford a small amount of air on all favourable occasions by day, which will give

colour to the shoots. An ordinary dung-bed covered with a two-light frame, started every alternate week, will give a fair supply, though in this matter the gardener must be guided as to the requirements of the establishment. The frames may again be utilised by stirring up the material, and adding some warmed fresh material, and renewing the linings if this be found necessary. The top-heat should not exceed 65°, or the bottom-heat 75°. Those who have pits heated by hot water-pipes at the top and bottom need not go to the trouble of making hot-beds of dung and leaves.

Seakale.—This delicious vegetable can be brought on in a manner similar to Asparagus, but instead of glass lights, wooden shutters should be utilised to exclude the light, or the blanching will be imperfect, covering with Seakale-pots having lids, or boxes 15 inches square, which are surrounded and covered with stable-litter and tree-leaves. For the first few batches the crowns should be dug up and planted about 3 inches apart in light soil, and placed in the Mushroom-house or cellar. Failing this accommodation, cover large pots or boxes with others of rather larger size, excluding every ray of light, and place them in a house having a temperature of 55° to 60°. The crowns start better if lightly syringed once a day. Under this kind of treatment produce is fit for consumption in four weeks from the start. A batch of roots should be started every ten days. Where it is the practice to force Seakale in the open ground, and produce is required in the last week in December, a start must be made forthwith. First clear away decayed leaves, and then dust the crowns with fresh soot and slaked lime, and cover with coal-ashes 2 inches deep, and afterwards place on the pots or boxes in position. These must be covered with fermenting stable-litter and tree-leaves, in about equal proportions, to a depth of 2½ feet. But tree-leaves alone, if well prepared, will usually afford enough heat if covered with long-litter. Test-sticks should be stuck into the bed, and if these are found to be too warm, that is above 60°, some of the materials should be pulled away from the sides of the pots for a while. Fresh crowns should be covered every four weeks.

Rhubarb.—In order to have Rhubarb at the end of December, forcing must begin forthwith, and for this batch strong crowns should be lifted and put into a house having a temperature of 60° to 65°, and be kept in darkness, covering the roots with leaf-soot, and not allowing it to get dry. Where plenty of suitable tree-leaves can be collected, a shed may be erected about 12 ft. long, 8 ft. wide, and 5 feet high, the rough boards of which the sides are constructed being placed 2 inches apart for the heat to pass through, leaving a small entrance on the sunny side. A body of tree-leaves 3 feet in width should then be packed around this shed, making them firm by trampling. Some straw or reeds should be placed on the top to prevent the leaves falling through. As the leaves settle down, more must be added. It is advisable to place a thick covering of straw over all, in order to throw off the rain or snow. A can of water and a syringe should be kept inside the shed, and the crowns lightly dewed over every morning. Rhubarb and Seakale are forced at Bicton in this manner, and we usually get a supply of both about December 20. The shed is sheltered by a Laurel hedge.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PARK, Esq., Prestwold Hall, Loughborough.

The Rose House.—I have recently referred to the condition of the climbing Roses in this house, and since then the weather having been warm and sunny for the time of year, the wood has ripened thoroughly, and the pruning may be performed. This will consist of the removal of shoots too weak to produce flowers or where they are crowded together, and the cutting back of strong shoots to promising pump buds. Enough young shoots of good

strength must be left to furnish each plant with flowering wood. The pruning being finished, unfasten all shoots and branches, cleanse the roof with soft-soap and water, in which a little carbolic acid is mixed. White-wash or lime-wash the walls, putting a handful of flowers-of-sulphur into a pailful of wash. Then regulate and refasten the branches, &c., so as distribute the flowering wood over the entire plant. Remove the exhausted upper crust of the border, replacing it with turfy loam, decayed manure, and some bone-meal. For a few weeks after pruning, the house should be thrown open. Tea Roses grown under glass are so readily inclined to grow, that forcing should not begin till quite the end of the year. Bring all Tea Roses in pots under cover. As soon as the soil in the pots is fairly dry, the pruning of these plants may be carried out. The pruning consists of the removal of all weak shoots and shortening of the stronger shoots, the soil in the pots being meanwhile kept on the dry side. All kinds of pot-roses received in from the nursery should be placed in cold pits or frames, putting the lights over them in rainy weather. Roses bought for potting purposes should be potted when received, plunged in a bed of tree-leaves, and sheltered from the weather in pits, &c. These later plants must not be forced until they have been a year, or longer time, in pots.

Caladiums, Gloxinias, and Tuberosus-rooted Begonias may now be stored away. The first two being wintered underneath the stage in a house having a warmth of 55° to 60°. Begonias may be shaken out of their pots, placed thickly in dry soil, and wintered in a fruit-room or seed-store having a warmth of not less than 45°, and be kept dry.

Berried Solanums. In the case of plants with the berries still green, let the plants be placed in a house having a temperature of 60° to 65°. These plants being subject to be infested with aphid, should be fumigated or vaporised occasionally. The latest batch of plants, till the berries show colour, may be afforded manure in the liquid or dry state.

THE HARDY FRUIT GARDEN.

By C. HERMAN.

Autumn Planting.—The condition of the soil and the weather at the present season is all that can be wished for by the planter of fruit-trees, and good use should be made of these favourable conditions in pushing on operations. Assuming that the ground has been prepared, there should be no hindrance to proceeding with tree and bush planting. A select list of suitable varieties of Apples and Pears for private gardens is appended.

Early Dessert Apples.—Irish Peach, Mr. Gladstone, Beauty of Bath, Red Juneating, Kerry Pippin, Duchess of Oldenburg, Devonshire Quarrenden, Lady Sudeley, and Worcester Pearmain. **Second early or mid-season:** for use in the last three months of the year, are Cox's Orange Pippin, the best flavoured dessert Apple of its season; it is a variety that has become very popular, and fine fruits fetch quite fancy prices. The new variety Charles Ross is also one that should be planted, and the price of maiden trees is now more reasonable than has hitherto been the case. Others are Ribston Pippin, King of the Pippins, Blenheim Orange, Allington Pippin, Margil, Claygate Pearmain, Adams' Pearmain, and Mannington Pearmain. **Late varieties** are Fearn's Pippin, Scarlet Nonpareil, Wykon Pippin, Reineette du Canada, Hubbard's Pearmain, Court Pendu Plat, Cockle's Pippin, Sturmer Pippin, and Allen's Everlasting.

Culinary Apples are Lord Suffield, Lord Grosvenor, a good and sure cropping variety, that succeeds where the first mentioned often fails; Ecklinville, Potts' Seedling, Stirling Castle, Grenadier, Cox's Pomona, and Warner's King. **Mid-season varieties:** Peasgood's Nonsuch, Lord Derby, Beauty of Kent, Golden Noble, Stone's, Blenheim Orange, Tower of Glamsy, Bismarck, and Royal Late Cooking. **Later varieties** are Wellington, Lanc's Prince

Albert, Afriston, Newton Wonder, Bramley's Seedling, Northern Greening, and Norfolk Beauty.

Pears for Bushes or Pyramids.—Clapp's Favourite, Williams' Bon Chretien, Souvenir du Congrès, and Beuré d'Amanlis. **Mid-season and late:** Triomphe de Vienne, Durondeau, Fondante d'Autonne, Louise Bonne de Jersey, Marie Louise, Pitmaston Duchess, Doyenné du Comice, Beuré-Superfin, Duchesse d'Angoulême, Beuré Diel, Promette Barabe, Josephine de Malines, and Bergamot d'Espereux.

Pears for Wall Culture should include—**Earliest:** Beuré Giffard, Jargonelle, Clapp's Favourite, Williams' Bon Chretien, Margarete Marillat, and Beuré d'Amanlis. **Mid-season and late:** Louise Bonne de Jersey, Marie Louise, Pitmaston Duchess, Consillier de la Cour, Beuré Superfin, Emile d'Heyst, Doyenné du Comice (the best mid-season Pear), Thompson's, Glout Moreau, and Beuré d'Anjou. **Latest:** Marie Benoist, Easter Beuré, Olivier des Serres, Winter Nellis, Le Lecteur, Nouvelle Falsive, Beuré Rance, Doyenné d'Alençon, and Duchesse de Bordeaux.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to SIR CHAS. TENNANT, The Glen, Inverlathie, Peeblesshire.

Early Forced Fig-trees in Pots.—Those trees intended for affording fruit at the end of April or beginning of May will now need dressing with an insecticide, soft soap at the rate of 1 ounce to 1 gallon of water answering well. Apply it in a tepid state with a brush, being careful when using it not to injure the points of the shoots nor to rub off the embryo fruits. The trees having been regularly stopped during the growing season, will require little or no pruning; but if the growths are much crowded and irregular, they should be thinned, and the trees made symmetrical. The Fig-house should be put into good order, the wood-work and walls cleaned with hot water, lime-washing the walls with quicklime and sulphur. It is necessary for the perfecting of the earliest crop that a mild bottom-heat should be provided, the pots being raised on loose brick pedestals, and the pit filled around them with Oak or Beech-leaves and stable-litter, pressed firmly together. The depth of the pit may be 3 feet, and when leaves alone are used, about 1 foot. Care must be taken that the heat does not exceed 65° until growth has taken place. The trees should be started about the middle of the present month, and brought along very gently, the house being kept close and moist by sprinkling the floors, &c., twice a day in bright and once in dull weather, affording a temperature of 50° at night, 55° by day, and with sun-heat 60° to 65°. The soil in the pots must be maintained in a thoroughly moist condition.

Succession Figs.—Any trees the shoots of which are not well ripened should be afforded artificial heat in the morning hours only, and plenty of air at night, artificial heat being turned off at mid-day. This course of treatment will help to mature the foliage. Unfruitful trees should be severely root-pruned, and the roots restricted to borders of a moderate size, more dependence being placed on the feeding-roots near the surface, encouraged by light mulchings, than on an extension of the main roots. These operations should begin just previously to the leaves commencing to fall. Mix with the loam used one-sixth of old plaster or mortar, and about the same quantity of road-scrappings, and make all quite firm. The Fig always does best when its roots have but a very moderate-sized border in which to grow, and is then more manageable and fruitful than is the case in wide borders. When the leaves have fallen, the trees should be pruned, and the house thoroughly cleansed. Trees infested with scale insects should be washed with soft-soap and water, and dressed afterwards with an insecticide. Keep the house cool and dry, but exclude frost.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY,	Nov. 10	Ghent Chrysanthemum Exhibition (3 days).
TUESDAY,	Nov. 12	Royal Horticultural Society's Committee Meetings; Chrysanthemum and Fruit Show at Chester (2 days); Birmingham (3 days); Belfast (2 days); Ipswich (2 days); Dulwich (2 days); Leeds (2 days); Brighton (2 days); Devizes Chrysanthemum and Fruit Shows at Bristol, Chesterfield, Ashgate, and Liverpool (1 to 2 days), also at York and Hull (both three days), and Buxton (one day), Bourne-mouth (two days).
WEDNESDAY,	Nov. 13	Chrysanthemum and Fruit Shows at Edinburgh, Stockport, and Manchester (three days); also at Exeter (two days).
THURSDAY,	Nov. 14	Bradford Chrysanthemum Show (two days).
FRIDAY,	Nov. 15	Chrysanthemum Exhibition at Antwerp (three days).

SALES FOR THE WEEK.

EVERY DAY—	Bulls, Pollexfen & Co.
EVERY DAY EXCEPT SATURDAY—	Bulls, at Protheroe & Morris' Rooms.
MONDAY, Nov. 11—	Bulls, &c., Stevens' Rooms.—Johnson, Dymond & Son, Lilium longilobum.—Eastwood & Co., 2 P.M.
TUESDAY, Nov. 12—	Shrubs, &c., Pollexfen & Co.—Clearance Sale, Ashleigh House, High Barnet, Protheroe & Morris, at noon.
WEDNESDAY, Nov. 13—	Vineries, Shop, &c.,—Hohne Lane, near Keighley, Yorkshire.—Nursery Stock, Haslemere, and on Thursday, Messrs. Mellersh.—Lilium longilobum, Protheroe & Morris.—Bulls, &c., at Stevens' Rooms.
THURSDAY, Nov. 14—	Falms, &c., Pollexfen & Co., Fruit Trees, at Ramham, Kent.
FRIDAY, Nov. 15—	Imported orchids, Protheroe & Morris.
SATURDAY, Nov. 16—	TENDERS.—Tottenham Urban Council, Trees, &c.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—42.5°.

ACTUAL TEMPERATURES—	LONDON.—November 6 (6 P.M.): Max. 41°; Min. 37°.
	November 7.—Foggy.
	PROVINCES.—November 7 (6 P.M.): Max. 57°, Scilly, Min. 35°, Home Counties.

The full history of the importation of Dutch bulbs into England is one of the many unwritten phases of horticulture. That Dutch bulbs have been imported into this country for over three centuries is a fact with which all students of the history of gardening are perfectly well familiar. One of the earliest, most extensive, and most notable of these importations occurred in 1567, when the Flemish worsted manufacturers were driven over to this country by the persecutions of PHILIP II. and the Duke of ALVA. But we are not just now so much concerned with what may be described as amateur importations, as with those on a wholesale scale.

For many years, certainly indeed for the last quarter of a century, there has been in

nearly every town in Great Britain an annual sale by public auction of Dutch bulbs, expressly imported for this purpose, and made up in small parcels to suit the small grower. It is scarcely necessary to state that these annual imports are not of the best class of bulbs; sometimes these purchases turn out successful, and at others the reverse—it is a speculation in which the buyer takes all the risks, and has no redress. If his double white Hyacinths turn out to be single pink, or if his Tulips refuse to show any sign of flower, he must console himself with the "might-have-beens." The finest stocks and varieties of bulbs find their way into the hands of the trade in this country, whose prices are necessarily considerably higher than those which prevail at auction.

But who, it may be asked, first introduced this system of selling Dutch bulbs at auction in this country? An earlier instance than has hitherto been adduced can be seen in turning over the very early catalogues of Messrs. CHRISTIE, MANSON & WOODS, the celebrated firm of art auctioneers, of whose records Mr. W. ROBERTS published an exhaustive account in two volumes in 1897, under the title of *Memorials of Christies*, 1766–1896. He came upon two catalogues which at once arrested his attention. The first of these is dated Friday, October 2, 1807, and announces the sale on that date of "A valuable assemblage of curious and singularly fine Hyacinths, and other bulbous roots of the rarest kinds and in every variety, suited for forcing in glasses in apartments, or for the garden, recently consigned from Holland."

The second catalogue is dated November 3 of the same year, but this second sale was not made up exclusively of bulbous roots. Specialising had not yet begun in the auctioneering business, and even the Mr. CHRISTIE of 1807 was satisfied to take whatever he could get to sell—all was fish which came to his net. Mr. CHRISTIE'S business was of a very miscellaneous character until long after the dates of these bulb sales.

As regards the sale itself, we do not think that Mr. CHRISTIE could have found the experiment a very profitable one, even if he had taken the whole of the proceeds. There is no name of any proprietor in the sale catalogue, so that the natural assumption is that the bulbs were either consigned direct to Mr. CHRISTIE, or through a broker.

This was a time when Mr. CHRISTIE'S auction rooms in Pall Mall were quite close to a large number of private gardens, and when Piccadilly was almost on the edge of the suburbs; the "lots" were arranged accordingly. The first lot in the sale consisted of six double-red Hyacinths, twelve double-white, two single-red, and three single-blue; whilst six large yellow Crocus roots, and four "fine different Narcisises," were added as a sort of make-weight. This lot was "bought in" at 12s. Following this came about thirty lots, each of which consisted of about twenty-eight roots, and realised from 10s. 6d. to one guinea per lot, some being sold, whilst others apparently did not reach the reserve. There were about thirty lots, which, in addition to the Hyacinths, included four double French Jonquils, and four different "Narcisises," making thirty-one roots to each lot, and these ranged from half-a-guinea to 17s. per lot; but not all were sold. Other lots comprised thirty-nine roots, including twelve different early

Tulips, and four early "Narcisises," varied from half-a-guinea to one pound. Lot 99 comprised one hundred and sixty roots, among which were twenty fine mixed double Anemones, a similar lot of Ranunculus, fifty late Tulips, thirty single Hyacinths, &c.; but the highest bid for this lot was £1 2s.; whilst other lots similarly made up averaged 15s. 6d. each.

Rather better prices appear to have been obtained at the second sale on November 3, but we have not been able to trace that Mr. CHRISTIE repeated the experiment. The names of some of the Hyacinths are preserved in the sale catalogue, but they all have to us, at all events, a very unfamiliar sound; some of them are probably still remembered by the older growers at Haarlem. The names are chiefly French or Dutch. Among the double red Hyacinths there were: *Delice du Printemps*, *Hugo Groffius*, *Rose Illustre*, *Delice de Flore*, *Princess van Nassau Weilburg*, and *Il Pastor Fido*. The double whites included: *Gravin van Welden*, *Madame de Saint Simon*, *Herona Regina*, and *Mark Graff van Baden*; double blue: *Kroom der Sweede*, *Perle Brillante*, *La Bien Aimée*, *Prins Willem 4th*, *Lente Vrengel*, and *Prins Loeckants*; single red: *Koninginne*, and *Roosenkrans van Flora*; and single blue: *Graaf van Bauren*, and *Bischof Royal*.

It would be interesting to know if any of these varieties are still cultivated in Haarlem, and also if there is any record of an earlier sale at auction in England of Dutch bulbs than that of Mr. CHRISTIE. The quantity of bulbs sent over each year from Holland for the purely speculative purposes of being sold at auction must be a matter of many thousands of pounds in value, and anything which has a practical bearing on so extensive an industry cannot fail to be of interest.

LINEAN SOCIETY.—The papers read at the first meeting of the session 1901-1902, on Thursday, November 7, at 8.0 P.M., were the following:—Mr. WARBURTON and Miss EMBLETON, "On the Life-history of the Black Currant Mite" (*Phytomyza ribis*). Mr. C. B. CLARKE, F.R.S., F.L.S., "Notes on the Types of Species of *Carex* in *Boott's Herbarium*." Exhibitions: Mr. W. BOTTING HEMSLEY, F.R.S., F.L.S., on behalf of the Director, Royal Botanic Gardens, Kew, (1) Germinating Seeds of *Araucaria Bidwilli*, Hook.; (2) *Tuber of Siebera deflexa*, Benth., an umbelliferous plant from Australia.

ROYAL HORTICULTURAL SOCIETY.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, November 12, in the Drill Hall, Buckingham Gate, Westminster, 1 to 4 P.M. A lecture on "Insecticides, Spraying for Fungi, &c.," will be given by Mr. R. NEWSTEAD, F.E.S., at 3 o'clock.

—At a general meeting of the Royal Horticultural Society held on Tuesday, Oct. 29, thirty-nine new Fellows were elected, amongst them being the Countess of CLOMEL, Hon. Mrs. TRELAWNY, and Lieut.-Col. LIONEL BENSON, making a total of 829 elected since the beginning of the present year.

"BOTANICAL MAGAZINE."—The following plants are figured in the November number:—

Musa oleracea, Vieillard, tab. 7802.—A species believed to be unique, in the possession of a

large underground tuber, filled with starch, which is boiled, toasted, or baked as an article of food by the natives of New Caledonia; its flavour, according to M. VIELLAUD, resembles that of the Yam. The tuber has eyes like a Potato, and the plant may hence be propagated by division. It differs from *M. sapintum*, not only in the tuber, but in the nervation of the leaf, the glaucous appearance of the lower surface of the leaf, and various floral characteristics. In New Caledonia it is said never to flower; there being thus, as is so often the case, a sort of antagonism between the production of tubers and the formation of flowers. At Kew it flowered in the temperate-house.

Senecio magnificus, F. Y. Mueller, t. 7803.—A South Australian mountain under-shrub, with glaucous leaves, the upper ones sessile, oblanceolate, coarsely and remotely toothed; flower-heads yellow, nearly 2 inches across, and arranged in loose corymbs; peduncles beset with small linear bracts; Kew.

Liparis trivittata, Reichenbach l., in *Gardeners Chronicle*, 1879, p. 225, and 1901, fig. 85: tab. 7801. Malay Peninsula. Introduced by Mr. BRIBIDGE.

Trevoria chloris, Lehmann, in *Gardeners Chronicle*, 1897, i. p. 315, t. 128, page plate: tab. 7805.

Syringa oblata, Lindley, in *Gardeners Chronicle*, 1859, p. 868; tab. 7806. Kew.

INSECT POWDER.—Experience has clearly shown, says M. E. COLIN in a recent number of the *Pharmaceutical Journal*, that flowers of certain species of *Chrysanthemum* are the most active of all vegetable insecticides, and wholesale dealers should purchase no insect powders that are not composed entirely of these flowers. The principal commercial varieties of insect flowers are three in number, viz., Dalmatian, Montenegrin, and Caucasian (or Persian). The most important of these is the Dalmatian; it is obtained from *Chrysanthemum cinerariifolium*, Vis. (*Chrysanthemum curranum*, Vis., *C. rigidum*, Vis.), a plant indigenous to Dalmatia, Montenegro, and Herzegovina. It is extensively cultivated in Dalmatia, with an amount of care that is sometimes prejudicial to its activity. Montenegrin insect flowers are obtained from the same plant in Montenegro, where it grows wild in abundance. Caucasian (or Persian) insect flowers consist of the flower-heads of *C. roseum*, Bieb., mixed with those of *C. carneum*, Lieb. These two species are closely allied, but their fusion into one, as advocated by some botanists, does not appear to be justifiable.

RICHMOND HORTICULTURAL SOCIETY.—The first Annual Dinner will be held at the Star and Garter Hotel, Richmond Hill, on Thursday, November 29, 1901, LEOPOLD DE ROTHSCHILD, Esq., in the chair. Mr. C. R. KING, Honorary Secretary and Treasurer of the dinner fund, who has charge of the dinner-table decorations, would be glad to hear from supporters of the Society who could furnish specimen plants, flowers and fruit, on this occasion.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—It is proposed to give a grand concert in aid of the above Institution in the Constitutional Hall, Chertsey, on Thursday, November 11, at 7 P.M. The following ladies and gentlemen, amongst others, have already accorded their patronage to the forthcoming concert:—Rev. E. R. Parr, and Mrs. Parr; the Hon. Stephen Poynts; D. E. Higham, Esq., and Mrs. Higham; F. S. Holland,

Esq., and Mrs. Holland; Mrs. B. E. Paine; Gilbert D. Jennings, Esq., and Mrs. Jennings; E. D. Stern, Esq., and Mrs. Stern; and others. The following well-known artistes have been specially engaged: Miss Edith Welling (Soprano); Miss Gertrude Freeman, Metallist, R.A.M. (Contralto); The Eolian Glee Singers, from Brighton; accompanist, Mr. Fred Monk, Organist Chertsey Parish Church. Mr. G. J. INGRAM, the Secretary of the Gardeners' Royal Benevolent Institution, is expected to be present. A. J. BROWN, F.R.H.S., of Jasmine Cottage, Chertsey, is Hon. Secretary, and will furnish all particulars on application.

THE PROTECTION OF ORCHARDS FROM FROST.—The November number of the *Royal Magazine* includes an article, by MARCUS TINDAL, on "Driving Frost from Fruit." The author describes and illustrates the methods employed in California (as elsewhere) to raise the temperature by suspending baskets of smouldering charcoal from the branches, running hot-water through pipes and channels, and making straw fires. All this is known to fruit-growers, but in the pages before us is told for the general public:—"The cold wave that swept over the States in February last year was accurately foretold, and the farmers in the Californian valleys were enabled to protect their fruit trees before the frost came. In Florida thousands of acres of Orange groves were protected in time to save all the bloom from the frost. Figures furnished by the growers show that the value of the Citrus-trees, Pine-apples, and vegetables saved from this frost in Florida alone amounted to more than £100,000." Screens and temporary houses were, on this occasion, erected over the plantations by the advice of the U.S. Department of Agriculture.

A WONDERFUL PEAR TREE.—In the issue of the *Fife and Kinross People's Journal* for October 26, we read that Mr. ROBERT MYLES, Carslogie Road, has in his garden a Pear-tree which bears marvellous crops. The tree is between fifty and sixty years old, is about 30 feet in height, and branches out to 25 yards in circumference. It has long been known as very prolific, and has for a number of years paid Mr. MYLES' fee, which amounts to over £2. In 1896 it produced 360 lb. weight of Pears, and by good nursing the yield has gone on increasing, and this year it is over 10 stones, and the price of the Pears sold has paid Mr. MYLES' fee nearly twice over. There must have been about 2,500 Pears on the tree, the fruit on the upper branches averaging three to the lb., and the lower branches five to six to the lb. The tree was a wonderful sight when seen in full blossom in summer, and in full fruit in autumn, with 2,500 fine Pears.

A KENTISH VINEYARD.—"The north-eastern part of the conventual enclosure," according to a statement in *A History of St. Augustine's Monastery, Canterbury*, by the Rev. R. J. E. Buggis, B.D., p. 182, "was known as the North-holme, a name that occurs as early as 1268; for in an agreement of that date made by the Abbot and the citizens, it was determined that any thieves caught in the 'Campi de Northome' should be subject to the abbot's jurisdiction. The place was evidently a source of much trouble, for a public pathway led to it, and the thickets and broken ground afforded a hiding-place for all kinds of bad characters. In 1320, therefore, Abbot Bourne, as has been already mentioned, stopped the pathway, cut down the trees, filled up the hollow places, and built a wall around the whole. In the days when the cost of importing wine was very heavy, a vineyard

would be a valuable possession; and the abbot made good use of the ground thus made available by planting Vines there. Some few years later the wages of the Vine-keeper are quoted at £2 12s., while £2 3s. 4d. was paid to Vine-dressers, and £1 13s. 11d. for trellises, and 5s. 2d. for tools. St. Augustine's owned another vineyard at Chisleat, and the wages there were the same as those paid to the Vine-keeper at North-holme. The cellarer's garden occupied the upper part of the precinct towards St. Martin's Church, and there was also a garden allotted to the abbot for his own use." Part of the North-holme in later years formed one of the nursery grounds occupied by the late Mr. Alderman MASTERS of Canterbury.

AGRICULTURAL EDUCATION IN AMERICA.—This is the subject of an address by Dr. JOHN H. WILSON, Lecturer on Agriculture and Rural Economy in the University of St. Andrews. "Whatever," says the author, "our shortcomings may be, the doings of other nations afford sufficient incentive to progress." Next follows a description of the valuable work undertaken by the United States Department of Agriculture, which has lately been visited to gain insight and information likely to be useful in the organisation of the recently-instituted Department of Agriculture and Rural Economy in St. Andrew's University. "The lesson we learn from a tour of this kind is that we should keep our eyes open, and take seriously to heart what is being done in other countries to help the farmer, gardener, and forester to get sound training in the theoretical and practical sides of his profession. We are awakening to our need of action, and there are many hopeful signs that our institutions will, before long, receive more encouragement." Certainly any revival of agriculture must begin with the education of individuals.

THE FRUIT-TRADE IN LIVERPOOL.—The October number of the *Canadian Horticulturist* contains some noteworthy remarks upon the trade in American Apples in England. We read that "From small beginnings the fruit auction has now become the hub of the Liverpool fruit trade. Five years ago, when the Apples imported into Great Britain aggregated 2,937,000 bushels, 1,598,291 were received at Liverpool, and practically all handled through the medium of the Liverpool Fruit Brokers and Buyers' Association. There are six brokers who control the auction, but other receivers who are not brokers sell their receipts through one of these six, who are Messrs. WOODALL & CO., J. C. HUGHTON & CO., JAMES ADAM, SON & CO., McGEORGE & JARDINE, T. CONNOLLY & CO., and ROGERS, WRAY & CO., each taking their turn of forty minutes and then twenty, and sometimes selling till late in the evening. The principal sales are held three days in the week, Mondays, Wednesdays, and Fridays, and the large dealers from all the leading towns in England and Scotland come in to purchase. Stringent rules are in force, binding on buyer and seller, and the bid of any buyer is refused who does not fulfil the requirements. The auction room is strictly public, and catalogues of sales are issued by the brokers on the day following, showing prices obtained." There is naturally much variation in the quality of the Apples sent in for sale, this not always fluctuating according to the state of the crops, but depending also on the manner in which these are picked and packed. "To buy an orchard in bulk is a direct incentive to bad packing. If a man buys an orchard that way, he is going to get the number of barrels counted on, no matter how it is

done. This year, the danger from this system will be particularly great, because, while the crop is perhaps the smallest on record, the amount of Apples put up for sale may be very large." As regards British traders:—"The Englishman is the best commercial man in the world—for England. He can present an account of sales which, while perfectly honest, will show the largest possible amount of charges for himself, and the smallest possible amount of profit for you; and he will do all this with the blandest smile in the world. At the same time, the market of Liverpool is the best market in the world for really gilt-edged products. A case in point; a Canadian Apple-grower for four consecutive years sent the pick of his orchard to London, on consignment, a dangerous thing to do, and yet his Apples netted him an average of 35d dollars in the orchard. That shows what can be done in London by discarding all small and inferior Apples, and sending the best only. As regards supplies from Tasmania, that country does not produce anything like as good a quality of Apples as is produced in New York State; and yet Tasmania, by her improved system of transportation, can send Apples 11,000 miles, largely over tropical seas, and land them in excellent condition, and get a high price. There are two commandments lying at the very threshold of commercial success. The first is, 'Thou shalt deliver goods as they are represented to be;' and the second, 'Thou shalt not deliver goods in poor condition.' Observe these, and success is assured in any line."

EXCESSIVE RAILWAY RATES FOR GOODS.—

We have received the following well-merited animadversion on the trade-killing rates of a railway company from Messrs. W. CURTISH & SOX, nurserymen, Hightgate:—

"We draw your attention to one of the great reasons of damaging trade in this country, whereby the foreigner can compete so favourably with us. We had a consignment of twenty-three crates of bulbs for loads, weighing 2 tons each, sent by goods train on the Midland Railway, which cost us in freight charges the sum of 45 sh. 8d. This very same consignment was sent to us from Holland and delivered into our own vans at the docks for 28s. We complained to the Midland Railway Company, and we give you a copy of their reply. It seems that we are powerless, and are obliged to pay these heavy charges for freight."

Messrs. CURTISH & SOX,

Hightgate Nurseries, Hightgate.

Gentlemen.—We herewith return you received account for £1 15s. 6d., for which we are obliged, leaving 15s. 2d. on account. This traffic is provided for in the classification, viz., 3rd class, and we have charged same. We cannot however go against this, and we must ask you to remit difference, £6 2s. at your earliest convenience.

(Signed) J. BLAKEBOUGH.

THE FRUIT COMMITTEE AND THE PRESS.—Mr. ALEXANDER DEAN proposes to call the attention of the Committee at its next meeting to a statement in a recent number of the *Journal of Horticulture*, reflecting on the conduct of the Committee.

M. LUCIEN LINDEN.—This gentleman has, as was foreseen at the time of the formation of the Company, just resigned his post as Director-General of the "Horticole Coloniale," of Brussels, where his place will be filled by the excellent subordinates that have been trained by him. After a Directorate of twenty-seven years, M. LINDEN is fairly entitled to repose on his laurels, but that is by no means his intention. He proposes henceforth to devote his attentions specially to the cultivation and hybridisation of Orchids at the remarkable establishment at Moortbeek, of whose wonders we have spoken in these columns, and which will in future be carried on under the style of LINDEN ET CIE.

SNOWDROPS.—The garden is like a circle—it has no beginning and no end. The Chrysanthemums end the floral year, but already they are overlapped by some Snowdrops, which instead of heralding the new year, appear to adorn the close of the old one. Mr. ARGOTT sends us from Carsethown, Dumfries, a specimen of *Galanthus Rachelle*. It is in such a hurry to show its flowers, that it does not wait till the leaves are ready. It is a native of Greece, and was discovered by Professor MAHAFFEY. Botanically it is a form of *G. nivalis*. It was described in *The Garden* for 1891, xxx., p. 243.

MIGRANTS.—The newly-elected President of the Horticultural Society of Orleans, as we learn from the *American Florist*, is Mr. J. A. NEWSHAM, a native of Lancashire, and once employed in the Orchid-houses of Mr. PERCIVAL, of Southport. He afterwards collected Orchids in Central America, and eventually established himself in New Orleans.

The death is announced at the age of seventy-two of Mr. PATTERSON, the oldest nurseryman in New Rochelle, New York. He was of Irish birth. [We should like to hear more of those who migrate to other climes, Ed.]

PUBLICATIONS RECEIVED.—*Crabbe's Horticultural Calendar*, part 6, Cassell & Co., Ltd., London, Paris, New York, and Melbourne.—*Annals of Astronomy*, October 25; Contents: Production of Milk and Butter, by MM. Malpeaux and Dorey; and Employment of Ammoniacal Manures on Calcareous Soils, by M. Guistinaud.—*The Queensland Agricultural Journal*, September.—*The Horticultural Journal*, *Copy of Good Hope*, September 12 and 26.—*Bulletin of the Botanical Department*, Jamaica, October; Contents: Banana soils of Jamaica, Cattle Food, Historical Notes on Economic Plants in Jamaica, Cmelona Bark from Jamaica, and Bananas as a Diet in Typhoid cases.—From the Imperial Department of Agriculture for the West Indies, *Scientific Experiments in the Leeward Islands*. Report on Experiments conducted at Antigua and St. Kitts, in the season 1900-1901. Part I. Experiments with varieties of Sugar cane, with an Appendix on the Chemical Selection of Sugar cane. Part II. Manual Experiments.—From the same Department: *Report on certain Economic Experiments conducted in connection with the Barbados Station, Antigua, 1900-1901*.—From the United States Department, Bureau of Soils: Circular No. 5, *Reclamation of Salt Marsh Lands*.—From the Division of Entomology: Bulletin No. 25, *Insect Enemies of the Spruce in the Northwest*; a popular account of results of special investigations, with recommendations for preventing losses, prepared by A. D. Hopkins. Bulletin No. 26, *The Fall Army Worm and Varied Cut worm*, by F. H. Chittenden. Bulletin No. 29, *Some Miscellaneous Results of the Work of the Division of Entomology*, prepared under the direction of L. O. Howard.

FLORISTS' FLOWERS.

NEW VARIETIES OF JAPANESE CHRYSANTHEMUMS.

The already long list of new varieties is being so rapidly increased, that it is a matter of great difficulty for those who have not the opportunity to inspect the flowers to make an annual selection of the most deserving varieties. The descriptions by the vendors are, as a rule, so elaborate that it is difficult to find some of the shades of colour given in the blooms.

If those persons who are responsible for the description of new varieties were to adopt a much more simple way of describing their qualities, they would be doing the gardening public a great service, enabling them to purchase novelties with more confidence than is the case at the present time.

With a view of assisting those who have not the opportunity to inspect new varieties, I have taken notes of the most desirable. There is no denying the fact that an exhibitor, in order to be successful, must add to his collection some new varieties that are improvements on those already existing.

For the sake of argument, I will take the two varieties Mrs. Weekes and Lady Byron, both of the same type, and both white. The latter was at one time a popular exhibition variety, but is now seldom observed, except as a decorative variety; whereas Mrs. Weekes, which is of more recent introduction, stands at the head of the Japanese section. Note also the great difference in the varieties Madame Carnot and Avalanche, the latter at one time a very popular white-flowered variety, but now seldom met with, it being displaced by Madame Carnot, which is a great improvement upon the former.

Most new varieties are of English origin, and fortunately the major proportion are of dwarf, sturdy habit; the stems are clothed with leathery leaves, and what is especially important, the flower-stalks are stiff enough to render the blooms self supporting, an important feature in a Chrysanthemum, especially decorative varieties. Violet Lady Beaumont was raised by Mr. N. Molyneux, of Rookesbury Park, Fareham. The expanded flower measures 8 inches in diameter, and from 5 to 6 inches in depth; the reflexing, flat florets show the deep crimson tint to perfection—the plant grows naturally to a height of about 5 feet. Mrs. Greenfield is best described as an improved Phebus. In form it resembles that beautiful variety, but of a deeper colour, having an orange suffusion; this is really a charming variety.

Exmouth Crimson has loosely formed flowers with incurving florets, which reflex with age, and show fully the upper surface colour of a rich shade of purple-crimson; the reverse is bronze, flushed with yellow—a fully developed bloom will measure 8 inches in diameter. Godfrey's Triumph has expanding florets, incurving loosely, and gradually reflexing in a drooping, graceful fashion. The colour is ruby-crimson, with a crimson and gold-yellow reverse—as the blossom develops it is reminiscent of M. Chénon de Lech. Sensation is fully deserving of its name, the colour being of a rich yellow, flushed and faintly striped with crimson; the loosely incurving florets are fully half an inch in width, forming a handsome reflexed flower fully 8 inches in diameter when fully expanded. Bessie Godfrey is of full size, the long, broad, semi-drooping florets curl at the tips; the colour, pale yellow, deepens towards the central or expanding florets; it is an improvement upon Madame Von Andre. Masterpiece is of an Indian-red colour, the reverse of the florets of a golden-yellow tint flushed with crimson; in general outline it is a variety that greatly resembles M. Chénon de Lech—it is of massive build, and will not fail to be admired. Exmouth Rival is a magnified Cullingfordi, and a grand addition to any section. The six varieties mentioned were raised by Mr. W. J. Godfrey in his Exmouth nurseries, and are a distinct advance upon existing sorts.

May Vallis has long, drooping florets which have an irregular twist at the point; the colour is pleasing—rose splashed and flushed with purple, which deepens in later blooms. The reverse of the florets is silver. General Buller, although one of last season's novelties, is this year quite realising the fullest expectations. The blooms are fully 8 inches in diameter and 6 inches deep; the broad, drooping florets are twisted here and there—the colour is yellow flushed red. Every cultivator should add this fine variety to his stock, no matter how small it may be.

Mrs. G. Milham I predicted last year would supersede even that grand variety Mrs. Barkley. As the florets of the former variety expand, which they do more readily than in the case of the latter, the lovely

surface colour is more fully exposed, which is very distinct and attractive, a glowing silvery-mauve; the florets, too, are broader and more massive. Miss Evelyn Douglas has medium florets, pointed, quite full, of good build; in colour rosy-mauve. *E. Molyneux*. [Some of the varieties mentioned in this article have been briefly described in the *Gardeners' Chronicle*, pp. 314 and 331, Ed.]

SOME CONTINENTAL NOVELTIES IN CHRYSANTHEMUMS.

It seems to be pretty generally conceded among Chrysanthemum-growers, that the continental novelties will not prove to be so high an average as in years gone by. Without either contradicting or maintaining this opinion, it may be permissible to say that there are thus early in the season some really excellent examples of continental novelties, although perhaps the number of them is

M. Odo Meulnare is another novelty from Calvat, a Japanese, with grooved florets, the colours being striking and rich, bright crimson, with a brassy reverse. For size, Madame Constance Walker is perhaps the biggest pearly-white tinted mauve. M. J. B. Galland is good, it has spreading flowers of great size, with a multitude of narrow florets, close and compact, colour pale golden terra-cotta, with gold reverse. The grandest bloom, however, of the year is unquestionably Calvat's Sun, an immense Japanese, with medium-sized grooved florets that twist and incurve, and form a deep solid-looking bloom. The colour is one of the purest and richest of deep golden yellows we have. It is quite as good in England this autumn as it was when I saw it in Paris the first time, and it is not necessary to be a prophet to say that Calvat's Sun is destined to occupy a foremost position on our show boards as soon as it gets into general cultivation. C. H. P.

POLYGONUM CYMOSUM

is a tall-growing species, with lanceolate, acuminate, glabrous leaves; and terminal, much branched, many flowered panicles of white flowers.

HOME CORRESPONDENCE.

THE MANUFACTURE OF CONFUSION.—On Sept. 21, 1901, at the meeting of the R.H.S., I saw three identical Dahlias with three different names. The bloom in question was a beautiful rosy-mauve with a white centre. In Ware & Co.'s exhibit it was ticketed "Brena"; in Cheal & Sons' it was ticketed "Loreley"; and in Hobbies, Ltd., it was ticketed "Miss Grace Cook." There was no difference between the three lots, other than that one would see between the flowers on the same plant. A noted horticulturist suggested that probably this variety was of continental origin, and when it came into the hands of different nurserymen in England, they changed the original continental name, and each gave it a different English name! It came out that some nurserymen are great sinners in the manufacture of this sort of confusion. I had in my pocket two Apples, the name of which I wanted to ascertain—a beautiful red-checked and a white one, both coming from the same tree. To my astonishment I was told that this Apple had three or four synonyms, of which "Yorkshire Beauty" was one! There is another great source of confusion: Nurserymen who raise new seedlings, often give different names to almost identical varieties. The only object of this, it would seem, is to swell the catalogues with grand names, to the confusion of purchasers and the writers of histories of garden-plants. It was stated some time ago that a raiser of Sweet-Peas had a list of some hundreds of new Sweet-Peas. He was advised to strike off about half of them as not sufficiently distinct to deserve different names! Can anyone suggest some sort of remedy for this confusion? Botanists feel the burden of numerous synonyms to the plants they have to deal with. If horticulturists who manufacture all sorts of plants are to burden their science and art with a similar number of synonyms, the outlook is not pleasant. It ought to be a point of honour not to change the name of a plant when once it has been christened—whether in this country or any other. E. Bonavia, M.D.

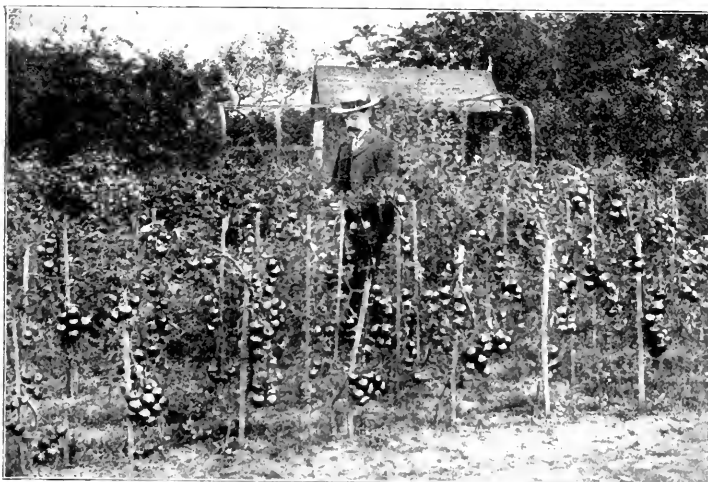


FIG. 105.—TOMATO UP-TO-DATE, IN AN AMATEUR'S GARDEN, DERBY.

rather under the mark. Madame Heerewege, the white sport from Australia, shown for the first time at the Paris Exhibition last year, most certainly does justice to its parentage. Marquis Visconti Venosta is not new this year, but it is unquestionably much finer than last. It is a noble bloom of massive dimensions, with great breadth of floret; the colour rich purple-amaranth, reverse silvery. Paolo Radaelli is a fine Japanese incurved, with grooved narrow florets, the colour pure pearly-blush; the blooms are very deep and solid. Eloe Fuller is not so large as some, but it is effective in colour, which is white, strongly streaked and suffused purple. Most of these are varieties of Calvat's raising, and are typical of the eminent Frenchman's seed-bed.

Another continental we saw last year when in Paris is Madame Marie Liger—this variety, it will be remembered, won the special prize offered by the American Chrysanthemum Society for the best new seedling. It is a deeply built Japanese incurved, with grooved florets of medium width, colour pale silvery-pink. Princess Alice de Monaco is a fine white, very popular with French growers. Biela is a promising new yellow; and so too is Etoile du Nord, but of a deeper shade.

TOMATO UP-TO-DATE.

Our illustration (fig. 105) affords an example of the successful cultivation of the Tomato out-of-doors so far north as Derby. The method pursued is simplicity itself, the ground being simply dug, levelled, made firm, the stones and rubbish cleared off, and the plants set out in May after danger from frost is over. Each plant was kept to a single stem, which was fastened to a rough stake, and evidently the view was taken after the plants had been deprived of their leaves with the object of ripening the remainder of the crop of fruit. The average number of bunches upon each plant was 9 to 13, and the number of fruits upon a bunch varied from 12 to 17. The variety Up-to-Date is apparently a good cropper.

PLANT NOTES.

ASTER GRANDIFLORUS.

This is a tall-growing form with spreading branches, bearing numerous small linear sessile leaves, which pass gradually into the bracts of the involucre. The flowers are nearly 2 inches across, the ray-florets bright violet, those of the disc yellow.

COTONEASTER MICROPHYLLA.—When treated as a wall plant, no shrub in the garden is more beautiful than is this Cotoneaster at the present moment. Growing up the south front of one of the cottages here (S. Hamis), is a specimen, 10 feet high, quite smothered, especially near the top, with its bright red berries; it was almost as beautiful when covered with its small white blossoms. No plant requires less attention in the matter of treatment; the soil should not be too rich, and the shoots as they grow in length should be secured to the wall neatly, and foreright shoots spurred in closely. E. M.

TREE LEAVES AND INSECT-PEST OF ORCHIDS.

—In last week's issue, speaking of likely suitable preparations on which to sow the seeds of Orchids, Mr. O'Brien names a compost composed partly of leaves. Now, of all the difficulties attending the rearing of Orchids, the greatest, I should say, is the presence of, and, under suitable conditions, the rapid multiplication of a certain little fly in the compost. This little fly has a drowsy, harmless appearance as it appears on the wing amongst the leaves, but it has a voracious appetite in the maggot period of its existence, which it retains in a less degree in its adult stage, always remaining vegetarian. It does not care for peat-fibre, has a decided liking for sphagnum where not actively growing, and regards the germinating Orchid as a fit-bit. This insect multiplies rapidly enough in the

ordinary peat and moss compost, but a thousand times more so in Oak and Beech leaves; in fact, Oak and Beech leaves kept moist with rain-water seem an ideal nursery-ground for it. A year-old seedling that has made unretarded progress might find the compost which Mr. O'Brien mentions a suitable one, as the insect does not, or rarely, touch the roots; but, in my humble opinion, leaves should be kept out of the house altogether where the seedlings are in their rootless stages, or when just endeavouring to form their first root. *J. M. Black (gr. to R. G. Thwaites, Esq.), Streatham.*

DRIED PLUMS.—Without wishing for one moment to disparage the efforts of those who, by drying Plums or other fruits, are endeavouring to promote what may be a valuable home industry, I do think no misleading statements should be made in relation to it. I noted at the Drill Hall on the 29th ult. that, in connection with the Worcestershire exhibit of dried fruits, French Plums were priced at 10*l.* per lb. I thought that rather high, and a day or two later made enquiry in Kingston as to the retail price of these Plums, and found a first-rate sample offered at 6*l.* per lb. That is, of course, a great difference. If the cost of drying English Plums on the Worcestershire method be compared with the retail cost of French Plums at 10*l.* per lb., the result may be much in favour of the home drying. But a very diverse result may follow if the basis of comparison be 6*l.* per lb. Take our most popular of Plums—Victoria. Assuming that good fruit can be grown or purchased for 1*l.* per lb., what is the cost of drying, as per the Worcestershire sample and method, and of packing into boxes as French Plums are, putting them into the grocers' hands, and enabling them to retail them at 6*l.* per lb., or possibly less? Again, assuming that can be done profitably, how will the respective qualities compare? Now, the general impression made on the minds (and teeth) of the Fruit Committee the other day was that the skins of the Victoria Plums had been dried to exceeding toughness. That being so, would any amount of soaking and stewing correct that toughness, and enable them to be placed on the table for consumption as good in quality or better than are dried French Plums? The cost of value is to be found in getting satisfactory answers to these queries. A member of the Committee remarked, concerning the dried-fruit exhibit, "If there was any money in this method, it would have been a great commercial industry long ago." That may or may not be true, but all these things have to be subjected to the commercial test. It is interesting to note that this exhibit of dried fruit will, on the 20th, be preceded by a very large one of home-bottled British fruit, which has become a great and profitable industry. Visitors to the meeting at the Drill Hall and the Fruit Committee will then have an opportunity to note how far the wet, of whole fruit preservation, compares favourably or otherwise with the dry method. An interesting lecture on whole fruit preservation will also be given at the same time. *A. D.*

APPLEY TOWERS AND LADY HUTT GRAPES.—It is a matter for surprise that these Grapes are not more largely grown than they appear to be, seeing that both are excellent. The reason for this is probably owing to their not being well known to gardeners and growers for market. Both varieties were raised in 1885 by Mr. T. D. Myles, at Appley Towers, Ryde, from Gros Colmar crossed with Black Alicante, the former being the seed-bearer. The result of this cross was very mixed, notwithstanding Mr. Myles's anxiety to keep it pure; and out of the nine seedlings, six had oval-shaped berries and three round, including Lady Hutt (white), the round berries being the best-flavoured. Appley Towers (black) was awarded a First-class Certificate by the Fruit Committee of the Royal Horticultural Society on October 22, 1889, and Lady Hutt a like award on December 9, 1890. The fruit of Appley Towers resembles Black Alicante in

shape of bunch, berry, and colour; but the bunches are more compact than those produced by the male parent, as well as being fit for consumption earlier, and of superior flavour. The Vine is a good grower and a free bearer. The bunches are of medium size, even in outline, and generally tapering; the berries of good size when well thinned, oval in shape, and in colour an intense black, and covered with a heavy bloom. The flesh is firm, and the flavour brisk and pleasant. It is a good autumn Grape, succeeding Black Hamburgh. The habit of growth, colour of wood, shape and colour of foliage of Appley Towers are almost, if not quite, the same as those characteristic of Black Alicante. Lady Hutt, in the habit of growth, possesses all the characteristics of Gros Colmar, excepting that the berries are white, or rather golden, in colour, and the foliage like that of all white or golden-coloured Grapes, dies off yellow. Like Gros Colmar, Lady Hutt grows freely and is a good bearer, but the bunches are more compact, and even in size and shape than those of Gros Colmar generally are. In other respects Lady Hutt might be fittingly pronounced a white Gros Colmar, but the berries are better in colour than those of the Grape bearing that name, raised some years ago at Charleville Forest, Tallmore, by the late Mr. Roberts, and the quality is also superior to White Gros Colmar. I have no doubt about Appley Towers and Lady Hutt Grapes becoming more extensively cultivated in the near future, than has been the case hitherto. In conclusion I should like to ask, in the event of there being no white Grapes grown in the vinery at Appley Towers, in which the cross between Gros Colmar and Black Alicante was effected, or in any of the other vineries at Appley, would it be possible, not to say probable, to obtain a white Grape from a cross effected between two black varieties? *H. W. Ward, Lime House, Ryeleigh.*

SELECT ROSES.—Very sorry, Mr. Slade, I am older than you; and neither of us is young or inexperienced enough to need a catalogue to choose from. Your list is as much too long as the other was too short. The few Roses I mentioned are the cream of the old H.P.'s (new ones I do not know), and will succeed almost anywhere, either budded or on their own roots. General Jacqueminot was sent out in 1853, Prince Camille de Rohan in 1861, Madame G. Luizeit in 1877, and Ulrich Brunner in 1881, which proves how fit they were to survive. How many new Roses are better for decorative purposes than those; or how many climbers are better than Gloire de Dijon, introduced in 1852? If I had to name the two best Roses for utility, I should say Gloire de Dijon and General Jacqueminot. *A. L. G., Oxford.*

OROBANCHE ON TROPÆOLUM.—Enclosed is a specimen of what I take to be *Orobanche rubra*, with *Tropæolum majus* as its host. In Bentham and Hooker I see that the usual host of this species is *Thymus*. Growing near to where the enclosed specimen was found was a large plant of the common Thyme, but on examination I found it to be entirely free from this parasite, whilst a row about 11 feet long of the *Tropæolum* was infested with it. *E. F. Cole, Crown Street, Dedham, Essex.*

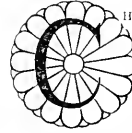
CLERODENDRON FALLAX.—Your correspondent, Mr. More, in his remarks on the cultivation of *Clerodendron fallax*, October 19, p. 291, has brought before the readers of the *Gardeners' Chronicle* a much neglected plant, and one of the most beautiful for autumn flowering. Although the raising of the plant from seed is recommended, I consider a more satisfactory method is to raise it from cuttings. As soon as a plant has ceased to flower, the stem is cut down to within three joints from the bottom, and placed in a house having a warmth of 65°, and when the shoots have grown to a length of 3 to 4 inches, they should be taken off, inserted in thumb-pots, and plunged in bottom-heat of 75°. When rooted, shift into large 60's, and not allowed to get

pot-bound. In the month of May the plants should be shifted into 32's, potting them lightly in soil consisting of rich loam three-quarters, and one-quarter decayed manure. After the roots have permeated the fresh soil, the plants must not lack water. Under this kind of treatment a succession of flowers may be obtained from August till December. *C. Garratt, gr., Swigland, Kent.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

(NOVEMBER 5, 6, 7.)



CHRYSANTHEMUMS and fog! Such have been the chief features of the present week. Never has the National Chrysanthemum Society held its chief exhibition of the season under worse conditions. So dense was the fog over-hanging London (and the country generally) on Monday last, that exhibitors in the Royal Aquarium, Westminster, experienced much difficulty in getting to the place of exhibition at the time desired. Then, some of them were engaged nearly the whole of Monday night endeavouring to arrange their groups, &c., in semi-darkness, for despite the fact that all the lights were burning in the building, a great pall of fog over-shadowed the interior of the place. Tuesday was but little better.

The attendance was certainly thinner than usual, and no wonder! Judging was commenced by the aid of artificial light about 10 A.M., and its use was necessary throughout the day. It was with much difficulty that judges or reporters could discharge their duties, for the colours of the flowers, as seen in such circumstances, are very misleading.

The show itself was a good one, and once again the exhibition was chiefly remarkable for the size and quality of the Japanese blooms. It was these that made the exhibition successful. They shone triumphantly over all the other sections of the flower, and probably were finer than any that have been shown heretofore. Incurred rank next to the Japanese, and since Mr. Higgs, gr. to Mr. HANKY, at Feltham Park, Leatherhead, has succeeded so well in their cultivation, these flowers are shown to the public in very praiseworthy condition. The rest of the types follow a long way after those already mentioned. Although there are classes for Pompons, Anemone-flowered, single flowered, and even reflexed varieties, there is no enthusiasm in respect to them, and they form a poor proportion to the whole. But if they are not glorious at exhibitions, we know, fortunately, that many cultivate them in gardens and admire them.

Plants, too, are becoming an unimportant feature at these exhibitions. For trained specimen plants, the prizes offered are smaller in amount than formerly, and probably if this were not so, the falling off would be just as evident as it is. Perhaps few will regret the disappearance of these plants, which, though specimens of skill, were extremely artificial.

The exhibition of 1901 has not been remarkable for the defeat of the favourites, and the success of outsiders. Mr. VALLIS, who won last year for Japanese blooms in the principal classes, has again won the valuable prize for sixty blooms shown in twelve vases and other 1st prizes; whilst Mr. HIGGS has maintained his position in respect to the Incarnums. Mr. Mease, gr. to A. TATE, Esq., who has succeeded in so many battles of the past, fared but poorly on this occasion, although few Chrysanthemum growers have had greater experience.

The Challenge Trophy in the Societies' class has been won by the Cardiff Chrysanthemum Society.

The arrangements for the show were carried out by a committee and Mr. Richard Dean, and as we have mentioned, their work was done under unpleasant conditions.

BLOOMS SHOWN IN VASES.

There were many more blooms shown in vases than formerly. It is evident that the public admire them most staged in this way, and the section which has now become established is likely to widen until the bloom upon boards will happily become the exception rather than the rule. If this be done, the effectiveness of the Society's exhibitions will be materially improved.

Twelve vases of Japanese blooms.—The most important of these classes was one for twelve vases of specimen

blooms of Japanese descent. Each vase was to contain five blooms of one variety, with not less than 6 inches of stem above the vase. The vases were about 16 inches high, arranged on tables 24 inches high. A sum of £50 was offered in prizes—£20, £15, £10, and £5. The 1st prize was won by the same exhibitor as in last year, Mr. F. V. ALLEN, of the Fruit Company, Ltd., Bromham, Chappellham. He staged the following varieties—Calva's 50, Le Grand Dragon, Australic, M. Chénon de Leche, Mr. J. Lewis, J. T. Carrington, Nellie Pockett, M. Reay (fine, soft-tinted yellow), Madame Carnot, Mrs. Barkley, Mrs. Mease, and Ed. Henderson. All of these varieties were shown in capital condition, the flowers being of extraordinary size, and not lacking in colour. Some of them would have been more effective had they possessed a little longer stem, so that the blooms might have been given even more space. This was particularly so in the case of Calva's 50. The most handsome bouquet was that of the excellent Mrs. Barkley, which was shown in grand colour, and next to this the white varieties pleased us most. At the same time, Le Grand Dragon made a very pretty picture. 2nd, Mr. Chas. Beckett, gr. to Sir W. G. PEACE, Bart., Chilton Lodge, Hungerford. His best vases contained Lady Hanham, The Princess, Miss A. Byron, and Mr. T. Carrington; 3rd, Mr. W. MERRILL, of the premises of Lord Salisbury, where the following were shown: Mr. S. F. COLE, gr. to the Right Hon. EARL SPENCER, K.G., Althorp Park, Northampton. Unsuccessful exhibitors included Mr. W. MEASE, Mr. R. KENYON, Mr. Albert Chandler, gr. to A. JAMES, Esq., Cotton House, Rugby; and Mr. Frank Bible, gr. to H. S. H. PRINCE HAZZLETON. In Mr. BIBLE'S collection, however, was the premier Japanese flower in the show. It was very characteristic of the class—Mr. H. W. KEES.

Use of the variety indicator.—The best six blooms of a white variety were shown by Mr. S. FOSTER, gr. to R. NIVISON, Esq., Tenterden Hall, Henden, N.W., whose specimens were not named. 2nd, Mr. W. COTTELL, gr. to Mrs. GIBBY PAVEY, Oxenfoth, Tisbury.

Vase of six Japanese blooms.—The best six blooms of a yellow variety were of Edith Tabor, shown by Mr. A. JELFRES, gr. to JOHN BAYLOR, Esq., Moor Hall, Harlow, Essex. 2nd, Mrs. Mease, shown by Mr. W. L. BASTIN, gr. to ALEX. HENDERSON, Esq., M.P., Bisset Park, Farningham, Berks. 3rd, the new variety, Kingway, shown by Mr. W. J. COLEMAN, nursery, 110, Euston.

Vase of six Japanese blooms.—The best six blooms of a white variety were shown by Mr. S. FOSTER, gr. to R. NIVISON, Esq., Tenterden Hall, Henden, N.W., whose specimens were not named. 2nd, Mr. W. COTTELL, gr. to Mrs. GIBBY PAVEY, Oxenfoth, Tisbury.

Six Japanese blooms in a globe.—The six blooms of a hairy-petalled variety were to include two varieties. 1st, Mr. HENRY LOVE, 1, Melville Terrace, Sandway, Kent, who had a very fine variety, a good one of this section, and beauty of form; 2nd, Mr. J. COLLINGHAM, gr. to HENRY D. HARRINGTON, Esq., New End Place, Hampstead Heath, and 3rd, Mr. A. PADDEN CLARK.

Six Vases of laurels.—This important class was on six vases containing five blooms each. The 1st prize of £10 was offered by Mr. G. H. RICHARDS, horticultural tradesman, and this was won by Mr. W. HUGG, gr. to J. H. HANKEY, Esq., Fetham Park, Fetham, Hants. His varieties were Louise Bates, Mr. Perfection, Hannah Glory, Lady Isabel, noble d'Or, and Duchess of Fife, all of them very nice fresh flowers of good quality. 2nd, Mr. G. J. HENI, and 3rd, Mr. FRANK BIBLE.

Six Pompano distinct, six blooms of each.—There were two collections in this class, and the better one came from M. T. CARVER, whose flowers were neat and of good colours, 2nd, Mr. A. PAGE, gr. to W. KILVER, Esq.

The large flowered Japanese Anemone blooms were very fine, especially the 1st prize collection of twelve flowers from Mr. W. KING, gr. to J. WARREN, Esq., Capel House, Wallham Common; 2nd, Mr. J. BARNAGE, gr. to G. W. WALKER, Esq., and 3rd, Mr. A. PAGE, gr. to G. W. KILVER, Esq., Ravenscroft, Moss Hall Grove, Finchley.

The large flowered pure Anemone blooms are more symmetrical than the foregoing. The ray florets are shorter, and the disc or "cushion" more highly developed, the general outline of the flower being more regular also. Mr. W. KING won 1st prize for twelve blooms in as many varieties, and shown in two vases—quite as neat as those just mentioned. 1st, Mr. L. A. G. from Mr. C. BROWN, gr. to R. HENRY, Esq., Langley House, Abbots Langley, but the blooms may have been a little small in size.

Six Anemone Pompano distinct.—Of several collections of six varieties each of these pretty little flowers, that from Mr. C. BROWN was the best, and the 2nd prize was awarded to Mr. Jas. Maule, gr. to G. HARVEY, Esq., Bolena, Hedley Common, Barnet.

Single flowered varieties have an attraction to many who have not unqualified admiration for the large Japanese blooms. Mr. W. ALLEN, gr. to G. L. G. of the Weymouth House, Palmer's Green, had the best collection of six varieties; and Mr. A. DEAR, gr. to

W. JORDAN, Esq., Hill House, Palace's Green, was awarded a 2nd prize.

BLOOMS SHOWN ON BOARDS.
AFFILIATED SOCIETIES' CONTEST.

This is a class open to any society affiliated with the National Chrysanthemum Society. Each society must stage forty-eight blooms, twenty-half of them Japanese and half inwards. The 1st prize consists of a Challenge Trophy and £10. This prize was won this year by Wales, we think for the first time, by an exhibit made under the auspices of the Cardiff and District Chrysanthemum Society. We may remark that the whole of the blooms were cultivated by Mr. GEO. W. DRAKE, 11, Cathays Terrace, Cardiff. It may at once be said that the flowers were a credit to that grower, the inwards varieties and Japanese alike, and they won the premier honours from four other competing societies, neither of which had blooms below exhibition quality. Among the Japanese varieties shown by the Cardiff Society were, in instance M. Chénon de Leche, G. J. Warren, Madame Carnot, Graphic, Chas. Beckett, and G. J. Church, M. J. Henry, Lord Salisbury, Ed. Molyneux, and Mrs. Barkley, all of which were very fine. Among the inwards, some of the prettiest flowers were Madame Fodot, Topaze Orientale, White Empress of India, C. H. Curtis, J. Lambert, Mrs. H. J. Jones, M. Perfection, and Mrs. W. Howe. It was noticeable, however, that the collection did not include a good deal of English, and of the Premier Society, although the 1st prize was won by a new society at this time. The 2nd prize was certainly not obtained by a "layman" but by The Epsom and District Chrysanthemum Society, and our own 1st or 2nd prizes in this competition so far as our memory serves us. Nevertheless, the flowers grown by Mr. W. HIGGS and Mr. G. J. HENI, and staged under the name of that Society, were a good deal better than those of Mrs. W. MEASE, Mr. J. THORNER, and Madame Carnot, Matthew Smith, Mermad, and M. Chénon de Leche, being fine in colour and size in most of the Japanese varieties, and the inwards were neat flowers, but some of them rather smaller and less well "built-up" than the 1st prize collection. The 2nd prize was won by the Wimbledon Horticultural Society, and the 3rd by the Premier Society, gr. to Mr. F. W. PUGH, Esq., Cornhill, Tavistock. The affiliated societies were the Royal Horticultural and Chrysanthemum Society and the Royal and District Chrysanthemum Society.

OPEN CLASSES.
INWARD BLOOMS.

The Hon. Memorial Challenge Cup and the Long the 1st prize of a collection of thirty six inwards flowers was won by Mr. W. HIGGS who had the following varieties—The Queen, Lady Belle, specimen in bud, Flower of the Year, Scotch Sorghum, Frank Hamilton, Mr. H. J. Jones, M. Perfection, H. G. Church, J. A. Perfection, M. Chénon de Leche, Topaze Orientale, White Empress of India, G. J. Warren, M. Chénon de Leche, Robert Bell, E. Young, Peckham, Ralph Hutton, Cornhill, Weymouth, Louisa Belle, Mrs. E. Kingston, Edith J. Acute, Donald's Fisher, King of the North, Esplanade, and the variety *First Snow*. The 2nd prize, £10, was won by Mr. W. ALLEN, gr. to G. L. G. of the Weymouth House, Palmer's Green, and the 3rd prize, £5, was won by Mr. F. W. PUGH, Esq., Cornhill, Tavistock. The 2nd prize was won by Mr. G. J. HENI, gr. to PASCAL RAY, Esq., Ashford Park, Epsom, who had smaller blooms, and Mr. W. MEASE, gr. to A. TAYLOR, Esq., Downside Leatherhead, and Mr. Frank Bible, gr. to H. S. H. PRINCE HAZZLETON, Draycot Clump, Chippingham.

Two blooms distinct.—In this class there were five prizes offered, and in addition to the money prizes, Messrs. Wood & Son offered a marble clock to accompany the 1st prize. This was won by Mr. HIGGS with a very excellent dozen blooms, most of which were large and well built up, most of the varieties were well known ones. 2nd, Mr. W. L. BASTIN, gr. to ALEX. HENDERSON, Esq., M.P., Bisset Park, Farningham, Berks; 3rd, Mr. STANT, gr. to N. L. COHEN, Esq., Round Oak, England, Green.

Six Blooms in a vase.—The premier award was won by the variety *Burdock*, of Epsom, by Mr. HIGGS, 2nd, Topaze Orientale, from Mr. W. L. BASTIN, and 3rd, an exceedingly large variety, not fully developed, from Mr. E. GANAN, gr. to T. J. BOVEY, Esq., North Fitch, Tonbridge.

JAPANESE BLOOMS.

Twenty-eight blooms distinct.—In this class the 1st prize consists of a Holmes' Memorial Challenge Cup and £10, and it was won this year by the winner of the same prize last year, Mr. F. V. ALLEN, of Bromham Fruit Company, Limited, Bromham, Chappellham. The varieties staged were as follows—*Back-wood*: Miss Hornewald, Marquis V. Venosta, Ed. Molyneux, G. J. Warren, Mrs. J. Bryant, J. Lewis, Theobald, Australic, two unnamed Seedlings, Miss Carnot, Miss P. Roddick, Lord Salisbury, C. A. Saller, T. Carrington, and Mrs. Mease, very fine. *Color*: Mr. Le Grand Dragon, M. Chénon de Leche, Ed. Molyneux, W. R. Church, Mr. R. White, Calva's 1891, a Seedling, Matthew Smith, Miss P. Rivoire, M. Chénon de Leche, Philip Rayner, Lord Ludlow, Mrs. G. Milham, J. T. Thorner, and Antra-

lian Gold, and Mrs. Barkley, excellent; *Flora*: Mrs. H. Weeks, a Seedling, E. Douglas, Mutual Friend, Henry Woodless, Alice Byron, Mrs. Coombs, very fine; *Milford*: Richard, Mr. C. J. Bony, E. J. Mountford, Duke of Exmouth, Henry Stone, Duke of Marlborough, Mous. Hoste, and Nellie Beckett; 2nd, Mr. GEO. W. DRAKE, 11, Cathays Terrace, Cardiff. He had excellent blooms of Mrs. J. Lewis, Mrs. Barkley, Miss Carnot, Graphic, Lord Salisbury, and Miss G. Bryant; 3rd, Mr. W. MEASE, gr. to A. TAYLOR, Esq., Downside, Leatherhead. These blooms were very fresh-looking, some of them fairly developed. A variety named George Davis was very fine in colour, light blue, Mr. W. MERRILL, gr. to GEO. WILDER, Esq., Stansted Park, Emsworth, Sussex. Sir H. Kitchener was a grand bloom in this exhibit, colour orange and yellow, a deep bloom of Miss Carnot style.

Use of the variety indicator distinct.—This is always a very popular class, and on this occasion there were numerous exhibits therein. The best was from Mrs. A. JELFRES, gr. to JOHN BAYLOR, Esq., Moor Hall, Harlow, Essex, and his varieties were—*Flora*: Lord Ludlow, Peckham, Princes of Exmouth, silver Queen, Miss Von Andrie, Mrs. G. W. Palmer, Miss Carnot, and J. R. Upton; *Color*: Mrs. J. Bryant, Florence Molyneux, Louis Brassey, Miss Alice Byron, Mrs. Barkley, Louis Foy, Mrs. F. A. Compton and Lady Hanham; *Graphic*: Miss Alice Von Andrie, Henry, Edith, Topaze, and Australian Gold, M. Chénon de Leche, Nellie Beckett, Ed. Molyneux, very beautiful in colour, and the florets broad, and Edwin Molyneux. 2nd, Mr. W. MEASE, gr. to A. TAYLOR, Esq., Leatherhead, who had also some first class blooms, especially Mr. Barkley, Mr. Geo. Carpenter, J. R. Upton, Esq., 3rd, Mr. J. W. ROBERTS, gr. to G. T. SWANBICK, Esq., Chiswick, Harrow Weald.

Two blooms distinct.—In this class there were no fewer than thirteen collections staged, and of this number that from Mr. L. E. BASSON was regarded best. He had a magnificent bloom of Mrs. Mease, also Mr. T. Carrington, Miss Carnot, and Mr. W. J. GORHAM in the *Back-wood*, a novel variety, Mrs. Coombs, and Lord Ludlow, of the 1st prize, and Lord Salisbury, Mrs. Barkley, Mr. H. Weeks, and Miss J. Lewis in the 2nd, Mr. A. JELFRES, gr. to JOHN BAYLOR, Esq., Moor Hall, Harlow, Essex, 3rd, Mr. W. J. GORHAM, EX. ANEMONE, whose collection had excellent specimens of the variety *novelties of the present season*.

OTHER TYPES.

Two blooms distinct.—This class can not lower than intermediate. We did not see much of the old to flowered reflexed bloom in present day exhibitions, but there were several collections shown in this class, the best being from Mr. T. CARVER, gr. to A. G. MESSNER, Esq., Alford, Leicestershire. These reflexed flowers are quite as well shown as that of the last year in appearance, and are not so far from being a variety of the intermediate class. The 1st prize of £10 was won by Mr. T. CARVER, gr. to A. G. MESSNER, Esq., Alford, Leicestershire.

Use of the variety indicator.—The best six Japanese blooms were shown by Mr. W. KING, who excellently in *Back-wood* and won the 1st prize to Mr. A. PAGE. We will append the name of Mr. KING'S collection—Mrs. P. Dime, white, W. W. A. T. gr. with many other ray florets, Owen's Perfection, Mrs. W. Howe, pink; Sir Walter Raleigh, lighter in color than the variety last named, but much larger, Middle's Broom, Queen Elizabeth with broad, white ray florets, and delicate pink cushion, very hand-some; and Le Chabonais, *Color*: Empress, Maria Jones, pure white; John Bunyan, a well known yellow variety of much merit; Lady Margaret, Descartes, crimson, a variety raised within the past few years, and the most effective in them all; Belvedere, Enterprise, and Mr. Levin from Mr. A. PAGE, Marie Marty, as staged appearing almost as cushion, with drooping ray florets next to invisible. Mrs. Caterer, white; M. Chas. Leboeuf, Mrs. J. Beckett, Lady Spaulding, Buche d'Abondance, brown; 2nd, Mr. A. PAGE, and 3rd, Mrs. A. TOWER.

AMATEURS' DIVISION A.
JAPANESE BLOOMS.

The 1st collection of thirteen Japanese blooms distinct, was shown by Mr. DAVID AGEE, gr. to MILTON BARR, Esq., Down House, Ball Road, Reading. There were several exhibits in this class, but Mr. Ager's was very fine indeed for an amateur, his blooms of Mrs. Greenfield, Australic, and others being capital; 2nd, Mr. C. H. MARTIN, gr. to Mrs. LANGRISH, Raynham, Hendon, who had blooms were Miss G. Henry and R. Hooper Pearson; 3rd, Mr. A. PAGE. There were several unsuccessful exhibitors in this class.

The following class for twelve blooms was won by Mr. AGER, as in the last class; and Mr. L. COUCH, gr. to W. KIM JONES, Esq., Trooster Lodge, West Norwood was 2nd. There were numerous exhibitors in this class.

The best collection of twelve inwards was shown by Mr. A. W. SCROOBER, gr. to W. WILKS, Esq., Elver-bee, Buckham Hill, and the best collection of six blooms by Mr. E. STABLES, gr. to Admiral WEAVER, W. Rugby Hill, Regate.

The best variety of innerveds, shown in collections of six each, was C. H. Curtis, from Mr. Jos. Childs, gr. to Mrs. Foss, The Priory, Totteridge.

Six bunches of Pompons, distinct.—The 1st prize in this exhibit was awarded to a collection from Mr. E. W. Coote, gr. to W. HOWARD, Esq., Leavesden, Weybridge, who showed the varieties, Westlake, a prince of orange, Esmond, &c., 2nd, Mr. W. Adridge, gr. to B. LACEY, Esq., Springfield House, Palmer's Green; and 3rd, Mr. A. Coote, gr. to E. W. HOWARD, Esq., Beechfield, Weybridge.

DIVISION B.

The best collection of eighteen Japanese blooms, distinct, was from H. A. ALLEN, Esq., 3, Kynin Terrace, Penarth, S. Wales; in this exhibit there were excellent blooms of Mrs. Barkley, M. Chénou de Leché, Matthew Smith, T. Carrington, and others. The sea atmosphere of Penarth seems unusually good for the development of colour, and A. R. KNIGHT, Esq., 63, Harbord Road, Ashford, Kent; and Prof. M. MARTIN SHUBERTY, Providence, Shalimar, Isle of Wight.

The best collection of twelve blooms was one from Ed. OAKEN, Esq., High Street, March. The point of colour was as high in this exhibit as in any in the show. Nothing could be brighter than his. W. F. D. SMITH, Sir H. Kitchener, M. Chénou de Leché, &c. Indeed, the quality was very high in each variety. There was much competition in this class, and the 2nd and 3rd prizes were won respectively by Mr. T. SHARPE, 1, Railway Terrace, Stone, Greenhithe, Kent; and W. GOODEN, Esq., Four Elms, Edenbridge.

The prize for six blooms were won by H. A. ALLEN, Esq., Penarth; W. GOODEN, Esq.; and J. G. MILLS, Esq., 161, Croydon Road, Anerley, London, S. E.

Another competition for six blooms was one in which the varieties were asked for, and two blooms of each. The 1st prize was won by H. A. ALLEN, Esq., who showed Matthew Smith, W. R. Church, and Nello Pocket; Mr. T. SHARPE was 2nd.

The best collection of twelve innerveds came from Mr. T. SHARPE, and the 2nd and 3rd prizes were won by Mr. W. G. PROBERT SMITH and Mr. RAULF J. JOLLIFFE, Fern Bank, Bournemouth, Isle of Wight. The class for six innervéd blooms was won by J. G. MILLS, Esq., 161, Croydon Road, Anerley.

Mr. FRED WALKER offered Challenge Cups in two classes (one for ladies only) for displays of decorative varieties of Chrysanthemums, but there was only one exhibit in either class, and the 1st prizes were very properly withheld.

MADON EXHIBITORS' CLASS.

In the class for exhibitors who have not previously won a prize at an exhibition of the National Chrysanthemum Society, Mr. H. BUCKMASTER, gr. to F. W. SMITH, Esq., Bimrove, and Barges Park, Weybridge; Mr. J. AS. WOOD, 8, Lodge Hill, Folkestone; and Mr. J. H. ARDRE, 26, East Hill, Dartford, won 1st prize.

PRIMER BLOOMS.

The premier bloom of a Japanese variety was one of Mrs. H. Weekes, and of an innervéd variety, Lady Isabel.

CHRYSANTHEMUMS IN POTTS.

Six specimen plants in large-flowered varieties.—1st prize, Mr. W. MOSE, gr. to A. TAYLOR, Esq., Downside, Leatherhead. His best plants were Clas, Davis, Col. W. P. Smith, Vivand, Mirel, and Lady Hannah. These were bush-trained, and measured 1 feet high and a feet above the pots in diameter, with foliage well retained.

Three distinct plants, one variety.—1st, Mr. Whitehouse, gr. to S. NICHOLLS, Esq., Oak Hill, Bickhurst Hill. The plants were 5 feet high and 1 foot wide on an average, and the varieties were Lady Hannah, freely bloomed; Miss Watson, and C. Davis, all good in foliage and flower. 2nd, Mr. P. E. WRIGHT, gr. to Mrs. TROTTER, Essex Lodge, Upper Clapton, with semi-globular plant about 3 feet high, and profusely flowered. The varieties were W. Tucker, W. B. Smith, and Edith Redoubton, the latter a very telling one.

Owing to the action of the Society in reducing the number of prizes awarded to framed plants, Pompon varieties and others were very few, and by no means very creditable examples.

The best three standard-framed plants of large-flowered varieties were those shown by Mr. P. E. WRIGHT, gr. Essex Lodge, Upper Clapton, 1st. The varieties were W. Smith, Edith Redoubton, and W. Tucker.

GROUPS FOR POTS.

The "fountain groups" of Chrysanthemums and foliage plants is not a new feature at these shows, although the term is somewhat new, in that in former shows, each mountain being divided into two equal parts, each of which was given to an exhibitor to furnish as seemed to him best. The result was that Mr. NORMAN DAVIS took 1st prize for his part of the fountain at the west end of the Hall. This consisted more nearly of Chrysanthemums than any of the others, and there was also less evidence of striving after uncommon and striking effects, and more of a desire to make good as a whole. Many of the blooms were quite up to show standard. Small Palms, Cyperus, Codonums, Ferns, &c., constituted the beds to colour, and these were not obviously displaced. Mr. E. Dove, gr. to E. J. WYTHES, Esq., Bickley Hall, Kent, was 2nd. This group contained very superior plants and cut flowers,

most of the latter being stood in tall vases, and all thinly arranged in conjunction with Aralias, Codivums, Draecenas, Palms, Ferns, Grovillias, &c. Three small vases elevated several feet above the rest gave gracefulness and variety, and added much to the effect of the arrangement as a whole. 3rd, Mr. J. LOCK, gr. to G. SMYTH, Esq., Elm, Orchard Lodge, Weybridge. This was somewhat similar in general arrangement, but scarcely so good as regarded the materials employed, and less artistic in treatment. Many good Japanese and innervéd varieties were observed, and Bambos were freely used as foils. 4th, Mr. J. SPINK, Summit Hill Nursery, Walthamstow. This group contained many distinct varieties, and a few good innervéd varieties; and as far as could be ascertained no cut blooms, everything on the contrary being in pots. A few Palms, Codivums, and Ferns, comprised the contrasting foliage.

FLORAL DECORATIONS.

There were several classes for exhibits of Chrysanthemum blooms in decoration. Miss C. E. COLE, The Vineyards, Feltham, won the 1st prize for three epergues; and Mrs. W. GREEN, Harold Wood, Essex, was 2nd.

Miss C. B. COLE had the best two designs made of Chrysanthemum blooms, showing an epergne and a wreath. In the latter the flowers used were orange, yellow, and white shades of colour, and the effect good. 2nd, Messrs. HARWOOD, Brothers, Holloway Nursery, Ballium; Miss ANSTY, 1, Knight Hill Road, West Norwood, who was awarded 2nd prize, had worked a model of the yacht Oshu, and this was placed over a mirror.

The best two vases of Pompon blooms were from Mr. W. C. PAGRAM, gr. to J. COURTNEY, Esq., The White Way, Weybridge.

Mr. H. Clark, gr. to B. WINTHROP, Esq., Barton Court, Kirbyton, had 1st prize for six blooms of a Japanese Chrysanthemum, arranged with any foliage favoured by the exhibitor. The effect was handsome. The blooms were of a yellow flowered variety, possibly Australian Gold, and shoots of Gerivilla robusta were interspersed with them. 2nd, Mr. J. SANDFORD, gr. to G. SMYTH, Esq., Elm, Orchard Lodge, Weybridge; and 3rd, Mr. J. AS. WOOD, Esq., Wood House, Finchley, N. K.

The best single vase containing six blooms of Chrysanthemums, open to ladies only, Miss C. E. COLE won 1st prize, and Miss ANSTY, 1, Knight Hill Road, W. Norwood, 2nd. Mrs. W. FRANKS, 13, Crescent Road, Kingston Hill, Surrey, had the best bouquet of Chrysanthemums, and Mr. R. GUNDEL, gr. to S. BROWNFIELD, Esq., Orchard Lodge, Keston, Middlesex, was 2nd.

The best single vase containing six blooms of a Japanese Chrysanthemum (unusually) was from Mr. A. ROBERTSON, gr. to F. J. YATLOW, Esq., Nutford House, 15, Abbey Road, London, N. W.

Mrs. W. TAYLOR, The Gardens, Tewkesbury Lodge, Forest Hill, won a 1st prize for an effective basket of natural autumn foliage and berries.

FRUIT COMPETITION.

There was very superior produce staged in the few competitions for which prizes were offered by the Society. Pears were well shown by Mr. W. T. STOWERS, gr. to G. H. DEARNS, Esq., 26, Harold Road, Sittlingbourne, the fruits being of more than average size, and free from all blemishes. We remarked as the finest specimen Pitman's Duchess, Concellier de la Cour, and Bourne, gr. to G. CLARKE, Esq., in some capital fruit. B. Bachelier. Not every one a variety of first-class flavour. Mr. E. COLEMAN, gr. to T. L. BOYD, Esq., North Ditch, Tonbridge, 2nd. These fruits were rather smaller, but consisted of some of the best dessert varieties. Very fine were Marie Louise d'Écluse, Doyenne du comice, Beurré d'Anjou, and Madame André Leroy. The 2nd prize fell to Mr. J. SMITH, gr. to EARL GIBBY, Combe Court, Kingston-on-Thames.

In the culinary Apple class for six dishes, Mr. STOWERS was likewise 1st with very excellent varieties, including Lane's Prince Albert, Emperor Alexander, Peasgood's Nonsuch, Lord Derby, &c. C. O. WALKER, Esq., Ickleford House, Wantage, was 2nd, Blenheim Orange, Feasgood's and Mere de Ménage being the finest. Mr. SMITH, gr. to Combe Court, was 3rd, with some capital fruits of the Queen, Sandringham, and Tyler's Wonder.

Mr. STOWERS continued his successes in these classes, taking 1st for six dishes of Dessert Apples, having very fine Robinson, orange, and Fother's Pippin; C. O. WALKER, Esq., was 2nd; and Mr. FRANK BIBLE was 3rd. Some few bunches of Grapes were shown in St. Stephen's Hall, which call for no remark.

Vegetables.—In response to Mr. K. SYDENHAM's offer of special prizes, the winner of the 2nd and 3rd competitions in all kinds of culinary vegetables, some of these being of remarkable excellence.

Collections of nine kinds of vegetables in competition were shown by Mr. E. BENNETT, gr. to Lord ALDENHAM, Aldenham House, Elstree, who was as usual 1st. We remarked as being of exceptional merit, Masterpiece Onion, Up-to-date Potato, Tomato Victoria, and Celery Queen. Mr. BENNETT was 2nd, and Mr. W. GIBSON, gr. to W. HUBSON, Esq., Bessfield Park, in whose collection were some capital Ailsa Craig Onions, Standard Beaver Celery, and Pragen's Beet. Mr. A. BASLE, gr. to Rev. O. T. POWELL, Wolven Park, Weybridge, was 3rd, showing Potato Pride of Britain, and very nice Carrots, Onions, Celery, and Tomatoes.

NON-COMPETITIVE EXHIBITS.

Mr. W. J. GODFREY, of the Exmouth Nurseries, Devon, secured a large Gold Medal for a magnificent exhibit of 600 cut blooms, in which many of the Exmouth novelties for the present season were shown in very fine condition. As most of these varieties are referred to on p. 335, it remains only for us to remark upon their general excellence and effectiveness of the display made of them.

Messrs. W. & R. OWEN, Castle Hill Nurseries, Maidenhead, were awarded a Gold Medal for a large exhibit of Chrysanthemums, including exhibition and decorative varieties.

The first-class new crimson Japanese Lady Bedlam was shown by Mr. N. JAMES, Esq., Brookside Park Gardens, Farnham, who had one dozen blooms.

Messrs. J. PEEB & SONS, Ronpell Park Nurseries, West Norwood, had a group of Chrysanthemums in pots (small Silver Medal).

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, made an imposing display of Chrysanthemum blooms under the organ, and was awarded a Gold Medal. Some recent novelties in this stand were, George, a new Pompon, a group of plants sport from William Kenhead; and the following Japanese varieties, amongst others, General Butler, George Lawrence, Elsie Neville, C. Jarvis, W. Neville, and W. Higgs.

Mr. R. C. PULING, Monkham's Nursery, Woodford Green, also gained a Gold Medal for a most decorative exhibit of Chrysanthemums in a line with that last mentioned.

Messrs. H. CANNELL & SON, Swanley, Kent, were awarded a Gold Medal for a fine display of Chrysanthemums and zonal Pelargoniums and Camas. Numerous exhibition varieties of Chrysanthemums were quite dull-looking in comparison with the exceeding brightness of the Camas and Pelargonium flowers.

Mr. JOHN GREEN (Messrs. Hobbies, Ltd.), Norfolk Nurseries, Loddham, exhibited a large collection of Chrysanthemums, which made a very imposing display, and was awarded a silver-cup Medal.

Messrs. G. PIERCE & SONS, Floral Nursery, 8, Tottenham, N., had a group of plants of the New Bronze Soleil d'Octobre, a sport from the well-known variety bearing a similar name.

Messrs. GEO. BONES & CO., Aylestone Nurseries, Leicester, had a group of Carnations in pots and cut flowers of same, inclusive of a large number of varieties of small Silver Medal.

Messrs. H. S. WILLIAMS & SON, Upper Holloway, London, N., in a group of miscellaneous plants had some pretty Erica, Begonia Gloire de Lorraine, Cattleyas, Oncidium Forbesii, Nerine flexuosa, and very charming native colored flowers; also blooms of Carnations T. W. Lawson and Peter Rugus (Silver-gilt Medal).

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, had a group of miscellaneous species of decorative plants in one of the galleries. There were batches of plants of Begonia Gloire de Lorraine, Liliums, Aralias, Ericas, &c. (Gold Medal).

The Executors of the late Mr. THOS. ROCHFORD, Turnford Hill Nurseries, Broxbourne, exhibited a grand group of plants in flower that had been referred to. There were Lilies of the Valley, Astibes (Saxifrage), models of Rhododendrons, Liliums auratum, longilimum, spicatum, and tigrinum. It is the first time that L. tigrinum has been shown in bloom in November, and it was most effective, grand in colour, and bore fifteen or more flowers upon a spike. The bright colour of this species will be especially welcome in the dark, foggy days of winter. L. auratum, too, was capital. It is interesting to note that the variety of longilimum is not capable of being retained, for the bulbs are unable to withstand the necessary cold temperature. The new Begonia, Turnford Hill, certified at the Drill Hall the week previously, was again shown in a nice little batch of cone-like plants (Gold Medal).

Messrs. WATKINS & SIMPSON, 12, Tavistock Street, Covent Garden, London, W. C., exhibited a group of plants of Lantana hybridum in full flower. They had been raised from seeds sown on June 5 last.

Messrs. S. SPOONER & SONS, Hounslow Nurseries, Middlesex, exhibited a collection of Apples and Pears (small Silver Medal).

Messrs. H. CANNELL & SON, Swanley, Kent, exhibited a very much larger collection of Apples and Pears, and were awarded a Gold Medal for same.

Messrs. DANIELS BROS., Norwich, exhibited a collection of cabbages, including a nice-looking new Potato named Salsation (Silver-gilt Medal).

Other exhibits included samples of turf, peat, and sand for garden purposes, from Mr. JOSEPH ARSOLD, 32, St. Paul's Road, Camden Town, London, N. W.; a very extensive collection of sundries from the well-known firm of Messrs. W. WOOD & SON, Wood Green; also sundries from Messrs. E. DOWELL & SON, Ravenscourt Avenue, Hammersmith; fruits of Apple Chas. Rivers, Messrs. W. HOBBS & SONS, Perry Hill, Cliffe, near Rochester; horticultural sundries from Mr. J. G. FOULKE, Putney; samples of Lawes' horticultural manures from the depot at 59, Mark Lane, London, E. C.; Ichthemic Guano from the manufacturers of that manure; straw mats from Messrs. C. W. NIET-

VERE & CO., Pinner Road, Harrow-on-the-Hill; vegetables said to have been brought to the degree of perfection exhibited, by the use of nitrate of soda. Permanent Nitrate Committee, Gracechurch Street, London. A new design of flower-press, by Mr. A. W. YOUNG, St. Vincent; and "foundations" for wreaths and crosses, &c., by Messrs. WILKINSON & SON, Newbury.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 20.—*Pres.* Dr. M. T. Masters, F.R.S., in the chair. *Messrs.* Deane, O'Neil, Bennett-Poe, Worsley, Hogg, Saunders, Holmes, and Gibson; *Drs.* Rendell and Cooke; *Revs.* W. Wilks, Englehart, and G. Henslow, Hon. Secs.

Hibiscus Ptelea-palustris.—Mr. DUFFEY exhibited a growing plant, known as *Sisalopodium v. ensata*, a viviparum, *Chilopsis*. It was a particularly prolific seedling. Mr. DUFFEY raised it from spores. The young fronds were dense clusters of young plants all over their surfaces, while the original bears them far more sparsely. Mr. DUFFEY also pointed out that the venation of the plants, like that of the parents, was partially reticulated, instead of being normally linear and free. Fronds of three other species were produced which were affected by a peculiar dark brown spreading rot, which Mr. DUFFEY said was contagious, so that contact of healthy fronds with fronds so affected led to their rotting in like manner.

Dr. COOKE undertook to examine whether it was a fungoid origin.

Sunflower, Replenishment of flowers by water.—Mr. EYLAND, Colwall, Malvern, sent a remarkable flower, in which every floret consisted of a solid axis, with no ovary, the scales being very numerous, and more or less of a purplish colour. Within them were several small florets, constructed in a similar manner, but having short solid axes, with numerous scales. With these the summit of the latter axes bore very minute immature scales. There was no trace of any essential organs or corollas.

Carex (var. etc.).—Mr. BOWLES sent specimens of the following species: *C. Tournefortii*, remarkable for never closing after the perianth has once opened; *C. ochroleuca*, with eight segments to the perianth; and eight stamens; *C. sativa* var. *caesum* and var. *Elwesii*, a scarce form; *C. longifolia*, var. *Willehmii*, and *melitensis*, with striped perianth leaves; *C. maritima*, a new Greek species; and *C. hexagona*, showing much range of colouring, including a pure white form.

Citrus seeds.—He also exhibited some germinating seeds of *C. longifolium* from which the embryo had escaped with the exception of the tip of the cotyledon, which was absorbing the reserve food materials of the endosperm.

Rhus Collinsii.—Mr. Englehart showed a mass of the abortive hairy flower stalks of the "wig tree." He had found it to be extremely useful for covering Narcissus seedlings. It keeps down mossy growths; it breaks frost, and keeps insects off; if it rains, worms are driven out by it. As some other species of *Rhus* secrete poisons, it was suggested that there might be something of that nature present. The tree had borne such large quantities this year, that he was able to cover 800 boxes, 8 by 8 inches in size, with a layer half an inch thick, which was sufficient to keep out the frost, whereas moss litch in thickness does not do so.

Pteronidium pediforme.—Mr. O'NEIL showed specimens of a crimson flowered scarlet *Pteronidium*, in which secondary floral axes proceeded from the umbels associated with foliage. The peculiarity is not uncommon, but it had become a fixed habit in the plant in question.

Cypripedium sole.—Dr. MASTERS exhibited a specimen of strobily formed *Carex* scales. Mr. SAUNDERS undertook to examine them.

Pea-riod with root.—Mr. HOLMES exhibited some pieces of the rind of a Pear, with remarkably large callousness of "grit" just below the surface. No can be called as assigned to its formation.

Birch bark.—He also exhibited a specimen of the thin bark of *Betula Bhojapattra* from India, where it is used as a writing material, the numerous papery layers being easily separated.

Vin leaves striped.—Mr. E. BAKER, SMITH, of Herington Hall, Sunderland, sent leaves and fruits. He observes:—"The disease is not confined to the Vine, but is growing on the timber in the house; only in the latter case it does not appear to thrive so well." Dr. COOKE undertook to examine and report upon it.

Tea leaf.—Dr. COOKE showed specimens of encumbrances covering the epidermis of leaves. They are made by *Aspilota*, *Lamproloma*, *Trioxys*, *Frax*. These worms contain a peculiar sugar, and are very common, but principally found on plants identical with that found in the stems of *Helianthus*, and other alkaline salts. It is found near Kermel, in Persia; see *Horticult. Soc. J. Papers*, p. 17, 1894.

Plum.—Dr. COOKE showed specimens of usually known as *Phragmites*, a secretion of silver and lime occurring in the root system of leaves. It was received from G. B. M.

BECKENHAM HORTICULTURAL.

OCTOBER 27. A meeting of the above date. Mr. H. J. CHAMAS, of Beckenham, presided. A hybrid *Antirrhinum* was shown, which was a most beautiful water colour. A young plant of *Myrica* was kindly lent by Mr. G. M. Roberts.

Mr. Chapman referred to the first hybrids raised by Denning and Sayer. He was very green on the variety most suitable for growing the best seasons and time of day for the trees, and a method of irrigation, ripening, gathering, and a method of degeneration, packing, and watering, so as to keep them and insect pests. Mr. Chapman referred to the value of home raised seedlings.



THE EARL JAMES CYPHER.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 21. On the evening of the meeting of this society on the above date, the following Certificates were awarded to:

- Cypripedium inaequale* var. *inaequale*, a fine form, as large as C. *Barroetii* Hall, but distinct therefrom, very heavily marked on the dorsal sepal. O. O. WOODLEY, Esq.
- Laelo Cattleya* s. *lunata* var. *Amy Leemannii*, a distinct form of this fine hybrid, rich bright yellow-sepal and petals, and intensely dark lip. J. LEEMAN, Esq.
- Cattleya* s. *Montezumae* Hall var. *inaequale*, well developed and nicely coloured. W. DEWENTON, Esq.
- Odontoglossum crispum* var. *Lily*, a hybrid flowered in three and a half years from time of sowing seed, in colour showing a large amount of blue, due to a rosy form of *O. crispum* as its pollen parent. W. THOMPSON, Esq.

AWARDS OF MERIT.

- Odontoglossum crispum* var. *Prestonia*, a spotted form, bearing eighteen blossoms on a spike. Charles Parker, Esq.
- Cattleya* s. *Lady Ingram* J. Leeman, Esq.
- Laelo-Cattleya* *Corchala* J. Leemann, Esq.
- Laelo-pastata* var. *marginalis* J. Leemann, Esq.
- Laelo-Cattleya* s. *Immaculata* E. Rogerson, Esq.
- Cypripedium* s. *Charlesworthii* var. *marginalis* E. Rogerson, Esq.

For groups of plants presented on Oct. 18, Silver gilt Medal, J. Leemann, Esq.

Silver Medal to W. Duckworth, Esq., for handsome group, containing a large number of *C. dayana*.

Silver Medal to O. W. Wrayley, Esq., for collection of *Cypripediums*.

Bronze Medal to E. Rogerson, Esq., for miscellaneous Group.

Vote of Thanks to Mr. A. J. Keeling for group.

Plants shown, but dealt with previously by the Committee:

- Dendrobium Phalaenopsis* form *depressum*, Charles Worth.
- Cypripedium inaequale* var. *Bullii*, Mr. A. J. Keeling.
- Cypripedium* s. *Prospere*, W. E. Watson, Esq.
- Cypripedium inaequale* *Sanderi*, E. Rogerson, Esq.
- Cypripediums* *Alvo* *Beatrice* E. Rogerson, Esq. P.M.

Obituary.

JAMES CYPHER.—It is with great regret that we announce the death of Mr. James Cypher, of the Exotic Nurseries, Queen's Road, Cheltenham, which took place at his residence on Friday, November 1.

Mr. Cypher, who was born at Cheltenham, in Gloucestershire, in 1827, settled in Cheltenham in 1848, and as head gardener to Miss Savage was one of the leading local exhibitors of plants at that time. Some years later, in the early sixties, he commenced business on his own account, by arranging a nursery garden and plant houses on a part of the Bayshill estate, which consisted of nothing more than disused clay pits. Soon under Mr. Cypher's skilful management, an important nursery-garden was evolved from these unpromising materials, and his forethought in extending the premises to meet the growing requirements of the trade, and his strictly honourable conduct in all his dealings, resulted in the steady increase of the business, and his reputation spread abroad as the most successful grower and exhibitor of plants at all the principal shows in the country, his successes extending over the greater part of a lifetime. It was generally admitted that James Cypher could grow and flower every plant he took in hand in the best manner, get the plant to the exhibition in almost as good condition as it left the plant-house, and stage it in a manner that admitted of no improvement. Always the same imperturbable, genial, smiling enthusiast, where plants were concerned; and even when staging his plants on the morning of a show, he was never in a hurry, and always had time for a few words with a passing friend, but, while talking, that keen eye of his was on his group, watching for any possible improvement.

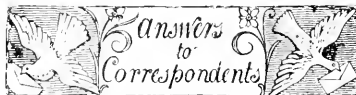
Of late years Orchids became a specialty at the Queen's Road Nursery, and especially *Dendrobiums*, in which the collection is specially rich. The Orchids answered to the good culture as other classes of plants had done before, and many medals and awards were secured for them. For some years past his nephew, Mr. John Cypher, who has all his uncle's skill with plants and cleverness in exhibiting them, has managed the business.

Mr. James Cypher, who had been twice married, lost his first wife in 1883, and his second wife rather suddenly on February 7 last. Soon afterwards he showed signs of failing health, and for the last three or four months had been steadily declining, although he took an interest in everything with which he was connected until the day of his death. By his first wife Mr. Cypher had two sons and three daughters.

His loss is deeply felt in Cheltenham, where he took much interest in public affairs. In 1881 he joined the Board of Guardians, which office he retained until April last. He was elected a member of the Town Council in 1895.

was re-elected in 1898, and his term of office only expired a few hours before he died. He was a staunch Conservative and Churchman, and for years served on the Church Council and School Committee for the parish of Christchurch. If he had lived until December 31, he would have been seventy-five years of age.

The funeral took place on Monday, November 4, in the presence of a large number of friends, and beautiful wreaths were sent by many of the leading residents as well as by some of his friends of the horticultural world in various parts of the country.



ARTIFICIAL MANURE FOR USE IN A KITCHEN GARDEN: E. The formula would vary according to the needs of the land and the crops. For Potatoes, 1 cwt. of kainite, 1 cwt. nitrate of soda, 1 cwt. iron sulphate, 2 cwt. common salt; this would be good for Beet, Carrots, &c. The same would answer for Potatoes, with super-phosphate of lime substituted for the salt. For leguminous crops the $\frac{1}{2}$ cwt. per acre of iron sulphate, and potash 1 cwt. per acre do good. It would be better if you had the soil analysed, and thus ascertain in what elements of plant food it is deficient.

BOOKS: W. Y. *Chrysanthemums and their Culture*, by E. Molyneux. Of this manual there have been ten editions, the latest having been published in 1898. It is to be had of the author, Swinmore Park, Bishop's Waltham, and of the publisher of the *Journal of Horticulture*, 12, Mitre Chambers, Fleet Street, E.C.

COONS ON IVY GROWING ON LARCH: G. W. Kenf. A mass of silken cocoons or galleries of one of the wax moths (*Aphomia sociella*, L.), which sometimes infest beehives to such an extent as to drive the bees away entirely. The caterpillars also infest wasps' nests, to which they are very welcome, but as a bee pest they are much dreaded in some localities, attacking more especially those stocks kept in straw hives. Your find is of much interest.

EARWIGS: A. B. P. Put something about into which the creatures can crawl and hide by day; lengths of bamboo and bean-haulm, pots stuffed with damp hay, &c., and empty these every morning into boiling water.

FICUS ELASTICA: W. T. Cuttings consisting of three or four joints of two and three-year-old shoots strike readily, put singly into small 60-pots filled with loam and sand, and plunged in a close frame or case, on bottom-heat of 80° to 85°. The leaves should be fastened erect to small stakes.

KIMBIFOLIA: A. Goodwin. We are unable to name the variety, owing to the blooms having fallen almost as soon as received.

MUSA ENSETTE: A. S. The only method by which you can reduce the height of the plant is to encase the roots in a brick chamber or slate tub; and if that has not the desired effect, cut down the large stem, and grow two or three suckers that will doubtless be thrown up by the roots instead of one.

***NAMES OF FRUITS AND OF PLANTS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Not more than six specimens should be sent. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: S. J. H. The Apple is Golden Winter Pearmain; 1, rotten; 2, Léon Lecleer de Laval; 3, Lansac; 4, Durondeau; 5, Beurré Superfin. — *Allegue*. 1, Cox's Orange Pippin; 2, Lord Salford; 3, Horned Pearmain; 4, Nelson Codlin (small); 5, Cornish Aromatic; 6, Cobham. — *Wetherby*. 1, Jolly Baggart; 2, Greenup's Pippin; 3, Augustus Pearmain; 4, your Apple appears to be that known as Ten Shillings, which is usually described as a second-rate acid dessert Apple, but it is more adapted for culinary purposes, as a rule; 5, Winter Greening; the Pear is Durondeau. — *J. G.* 1, Boss Pool; 2, Scarlet Leadington. — *G. C.* 1, Winter Greening; 2, Queen of Sauce; 3, Reinette du Canada; 4, Small's Admirable; 5, Yorkshire Greening; 6, Royal Reinette. — *F. G. R.* 1, Smart's Prince Arthur; 2, Broad-eyed Pippin; 3, Loan's Pearmain; 4, Ribston Pearmain; 5, Reinette Grise; 6, Saueré Vert. — *J. B. P.* Haut's Deux Ans. — *P. B.* 1, Van Mons, Léon Lecleer; 2, Best Espéren; 3, Winter Nelis. — *J. T. L.* 1, Norfolk Belling; 2, Greenup's Pippin, also known as Red Hawthornden; 3, Winter Strawberry; 4, Musette de Nancy. Some of the labels were displaced, but we have appended the number to the fruits to which they appeared to belong. — *A. B. C.* Your Pear is one that is not generally known in England. It is the Poire d'Angora of the French pomologists. It is fully described and figured in Leroy's *Dictionnaire de Pomologie*. — *T. W. Lucas*. 1, Yorkshire Greening; 2, Bedfordshire Founlding. — *J. D. C.* Possibly a local variety, but it is well worth growing. — *W. C. & E.* 1, Kilkenny Pearmain; 2, Redding's Nonpareil; 3, closely resembles Federal Pearmain. — *Ripon*. Not in condition for determination. — *G. R. H.* 1, Martin Sire; 2, Flat Nonpareil; 3, Downton Nonpareil. — *G. J. D.* The specimen is much too over-ripe for us to form an opinion.

NAMES OF PLANTS: H. W. 1, Sedum, perhaps rupestre; 2, Fuchsia Riecartoni; 3, Fuchsia magellanica, wrongly called coccinea; 4, Staphylea pinnata; 5, Eonymus europæus, Spindle-tree. — *F. J. R.* 1, *Phacelia congesta*; 2, *Convolvulus maritimus*; 3, *Daphne Laureola*; 4, *Plumbago Larpentæ*. — *J. S. R.*, read our rules. 1, *Thuya occidentalis*; 2, *Thuya (Biota) orientalis*; 3, *Physalis Francheti*; 4, *Rubus laciniatus*; 5, *Rosa rugosa*; 6, *Cistus*, no flowers; 7, *Cotonaster*, perhaps *C. frigida*; 8, *Spiræa*, no flowers; 9, *Tradescantia virginica*; 10, *Ballota*, no flowers; 11, *Libonia*, no flowers; 12, *Cestrum aurantiacum*; 13, *Cassia corymbosa*; 11, *Abutilon*, impossible to say which without flowers; 15, *Centaurea montana*. You send more than double the regulation number, and many of them leaves only. You should make amends by sending a donation for the Gardeners' Orphan Fund. — *W. H. Y.* 1, *Cupressus pisifera* (*Retinospora squarrosa*); 2, *Thuya gigantea* (*Lobbi*); 3, *Retinospora plumosa aurea* of gardens; 4, *Picea excelsa* var. *Clambrasiliana*; 5, *Cupressus* (*Retinospora*) *pisifera plumosa*; 6, *Cupressus* (*Retinospora*) *pisifera* var. *squarrosa*; 8, *Weigela hortensis nivea*; 9, *Berberis empetrifolia*; 10, *B. Wallichii*; 11, *B. stenophylla*.

ORCHID-BLOOMS IN COLLECTIONS OF CUT BLOOMS AT SHOWS: F. T. Yes! provided the Orchids are of distinct species.

PROPAGATION OF ORNAMENTAL TREES AND SHRUBS: *Arbor*. A series of articles was given by us in the *Gardeners' Chronicle*, in vols. xix., xx., and xxi., 1896 and 1897.

PHYSALIS ALKEKENGII: *Inquire*. Sow out-doors in April in prepared soil in a sunny situation, broadcast the seed and lightly raking it in. Seed may likewise be sown in a cold frame, or slightly hastened by heat up to the germinating stage, and grown cold afterwards. Prick off into boxes or nurseries and set out permanently in beds in June. P. Alkekengi and P. Francheti require similar treatment—the first named is hardy. We are not aware that any insect does the plants any harm, except aphides.

RICHARDIA ELLIOTIANA: *Calla*. When at rest keep cool and dry, like *R. ichiopia*; but when growing afford intermediate-house treatment for the first few weeks, or till the weather gets warm, when green-house temperature is more suitable.

SWAINSONIA GALEGHIFOLIA: L. T. An excellent plant to grow on the back wall of the greenhouse above the staging. The plant will make good growth in equal parts of turfy-peat and loam, or in loam alone, if it contain plenty of the turfy portions; and when a plant is sufficiently large, it may be kept in health with weak manure-water. Repot in March or April. The plant is apt to go away on one side with strong shoots, and weak ones on the other, a habit that must be controlled by tying down the strong shoots, and affording light and space and an erect direction to the others. Stopping of the shoots, excepting in young plants, is undesirable.

TEMPERATURES: *Veritas*. *Vanda Jenisoni*, with the East Indian or warmer house with considerably humidity. *Laelia majalis*; the temperature in the growing season should range from 60° to 65° by day, and from 52° to 60° by night, allowing a considerable rise by day in warm weather. In August and September the plant may be put out of doors, indeed this is the only treatment if it is to be got to flower well. *Cypripedium Roeblii*; the Mexican-house will best suit this plant.

THE NEIGHBOUR'S FOWLS: *J. Rhymer*. If you cannot keep the fowls out of the garden, and your neighbour will not keep them in pens, you should put fishing-net over the Cabbage plants, keeping it 2 feet above them by means of arches of Hazel or other rods.

WARTS ON LEAVES OF TABERNEMONTANA: *A. Workop*. Our authority on plant pests writes: "I have made a most careful microscopic examination of these, and can find no trace of either animal or vegetable parasites in them. The soft tumid warts consist chiefly of minute oil globules (not starch) and broken down cell structure. I can make nothing of the dry, scurfy warts and patches. On the leaves I found a number of active mites, and a few young mealy-bugs. If the former were in sufficient numbers they might cause injury, but in what form I cannot say. They were not Phytiopti. Judging from experience, I should imagine the disease to be constitutional, and very probably brought about in the way you suggest." This opinion coincides exactly with our own experience of this plant, or that there is a lack of balance between the degree of humidity and the ventilation.

WATER-CRESS: H. W. C. Make the bottom of the water course level, then place a layer 6 inches thick of pasture loam all over it, and place a thin layer of clean gravel over all. Plant the cuttings (rooted) of the Cress, and keep 4 to 6 inches of water over it. If there is a slight current, so much the better. The late Shirley Hibbert wrote a handbook on Water-cress, which was published by Messrs. Groombridge, but probably now out of print, and only to be bought at the old book-shops.

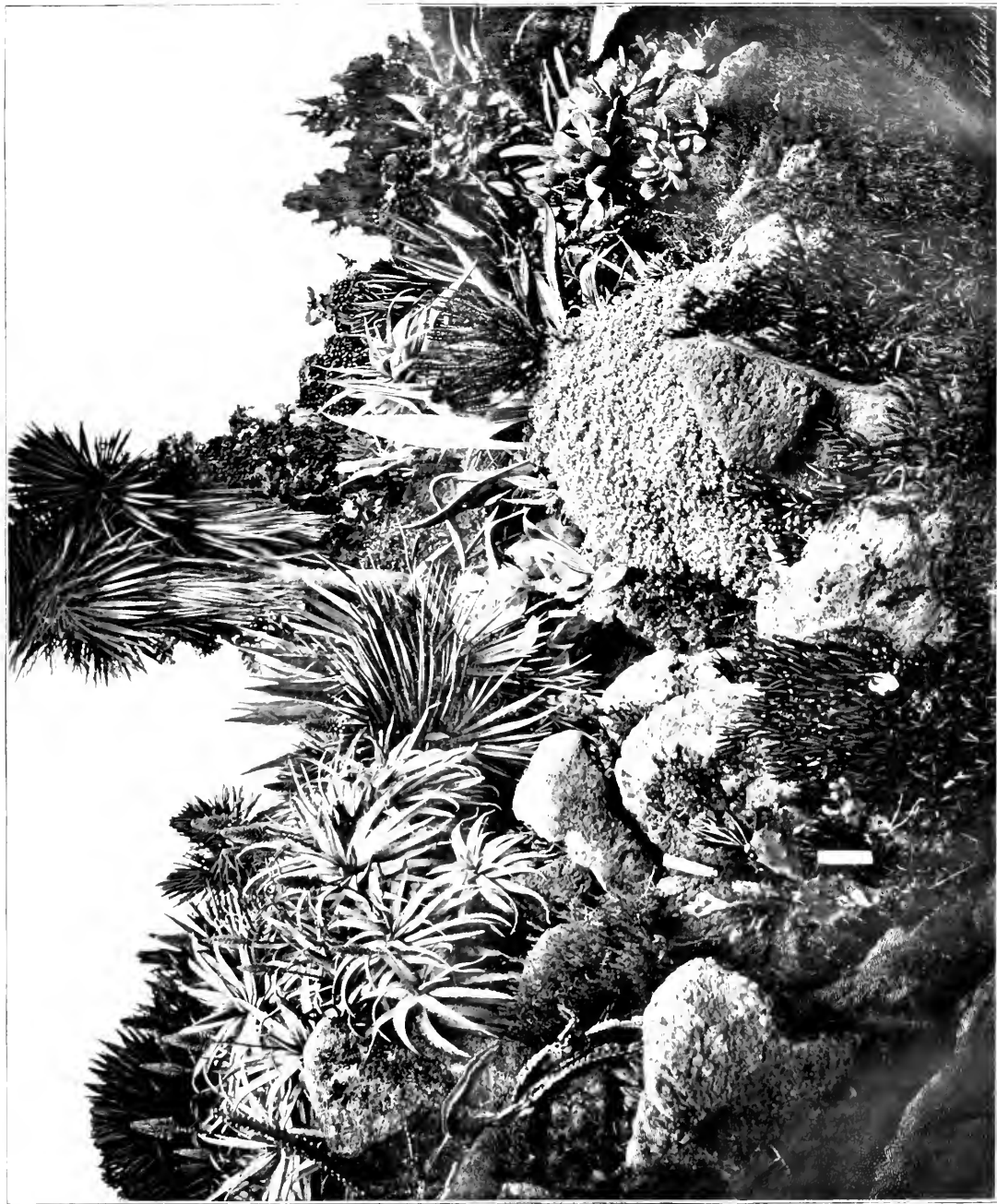
YELLOW FLOWER: *Correspondent*. *Chrysanthemum Cloth of Gold*, one of the segetum \times frutescens vars., or vice versa.

COMMUNICATIONS RECEIVED:—N. K., Malshanger. — E. H. J., W. M., Beekswell. — J. Downie. — A. W., G. Burch. — G. B., Saxtoncliff. — G. Hewitt, specimen not named not kept. — L. B., A. L. G., E. T. M., will enquire. — A. H., F. M., A. B., T. H., S., E. C., M. E. C., L., Justin Corderoy. — J. W., Junior. — Santa Barbara. — J. O'B., J. W. M., Wild Rose. — D. R., G. G. R. D., A. O'Neill. — Hurst & Son. — P. W.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE." IMPORTANT TO ADVERTISERS. — The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

63 TREBLED. 63

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



ROCKERY, BOJANG GARDEN, MUEBURN.

he adds the caution—provided water is very carefully afforded, and the plants repotted annually, otherwise great damage may be done. Mr. Gleeson selects a pot just large enough to take a plant, one hollow crock is placed over the hole at the bottom, and the plant is potted in the leaf-soil to within an inch of the rim; it is then surfaced with sphagnum-moss. In affording water the object should be to moisten the sphagnum-moss only, the leaf-soil obtaining sufficient moisture from that to keep it in the moist but not wet condition in which it was first placed in the pot. The whole of the Cattleyas at The Warren House have been kept tolerably dry for some time past, and the material in which they are potted is a mass of roots, the tender points of which are still growing. The leaf-soil is now in precisely the same slightly moist and perfectly sweet condition as when it was first put into the pots. No better proof of the utility of leaf-soil for Orchids could be found than the robust and floriferous plants to be seen at The Warren House, which have always been grown in the manner described. Those who may elect to try it should adopt Mr. Gleeson's methods in potting and affording water, these being the essential points.

We observed a good lot of *Dendrobium Phalenopsis* growing in a stove, also a very fine batch of *Cattleya Warsceviczii* and *Dendrobium formosum giganteum*, and some other difficult subjects in very fine condition.

PLANTS WHICH BURY THEIR SEEDS.

(Continued from p. 334.)

ONE or two matters remain to be considered. We naturally enquire in the first place, what end is served by this device? The answer is, that as the struggle for life went on, the plants found they were in danger of being ousted if they did not make an effort. Some could not secure the regular visits of insects. This might be due to their obscure position, their early period of flowering, their inability to offer sufficient inducements in the way of nectar or pollen, or various other causes. They might find their fruits and seeds devoured when developing or ripened, or they might experience difficulty in getting them distributed. They therefore cast about for means of solving these problems, and here is one of the results. Certain flowers found they could not as their own gardeners. They would therefore grow and sow their own seeds.

But, asks an intelligent youth, is there not a danger and disadvantage in this? Will not the plants exhaust the soil and so starve themselves? Do they not become so wedded to one place that they cannot spread and develop? We should answer in the affirmative if facts were not against us. Theoretically this is the case; in practice no evil results follow. And as it was a choice between two evils—that of extinction, and that of limitation—the plants preferred the law of limitation to that of extinction. True, the theory is that plants growing in the same situation continually tend to exhaust it, but there are exceptions. All the seed-burying plants thrive, though in a modest way we must admit. They are none of them giants and princes, but their plebian wants are regularly met in wall-hink, hedgerow, and sand-bank, and none of them seems likely at present to become extinct. The Toadflax never adorned as many walls and ruins as it does to-day, Violets surely were never sweeter

or more profuse; and the Trefoil is found in many lands, and widely diffused in our own. And now see how the plant economises its resources. Since these various devices have been in vogue the Trefoil, for example, has been able to minimise the number of its seeds. That in itself is an important point, for no process is more exhausting. Then it is not only economical but prudent. If the whole of the flowers in the Trefoil yielded seeds, the soil would be overstocked, and a slaughter of the innocents would annually take place among themselves. But now several of the flowers act as an anchor to secure the others in the soil, and where fifty seeds would be produced in another kind of Clover, Vetch, or Trefoil, five will here be an average number. So with the other plants. In the Violet, the subterranean seeds are far less numerous than those grown from the cross-fertilised blooms.

Luiblock, reviewing a few cases to which he has called attention, remarks that it is of interest to observe how "the subterranean pods differ from the usual and aerial forms in being shorter, and containing fewer seeds. The reason of this is, I think, obvious. In the ordinary pods the number of seeds, of course, increases the chance that some will find a suitable place. On the other hand, the subterranean ones are carefully sown, as it were, by the plant itself. Several seeds together would only jostle one another, and it is therefore better that one or two only should be produced."

Brief as this review is, I think it cannot fail to impress us with the wonderful plasticity and adaptiveness of plant life; while it gives us practical hints as to the readiest and most economic ways of solving some of the great problems which we ourselves also frequently have to face in our struggle for life. If these illustrations do not support the old theory of design, they at any rate do not give countenance to the theory that we are mere creatures of fate—we are best with the most wonderful endowments. *A. Sasser, Naturalist.*

A VISIT TO THE NORTH V.

(Continued from p. 328.)

SOME GLASGOW NURSERIES.

A SCOTCH ROCHFORD'S.—Some conversation with a friend in the exhibition determined me to go out to Baillieston and see the nurseries of Messrs. Findlay Brothers. Few persons in the south have a proper conception of the extent of this business. It was described to me as a "Scotch Rochford's," and so it proved to be a nursery very much after the heart of the lamented Mr. Thos. Rochford.

Entering the premises rather late in the afternoon, I was fortunate in finding Mr. Thomas Findlay at home, and he greeted me very heartily, showed me all there was to be seen, and said that he believed I was the first representative of a London horticultural journal that had ever been there.

The glasshouses cover 6½ acres of land, and they are chiefly span-roofed structures with only an occasional division between them, built on the ridge and furrow system common to establishments of this kind. Generally they are 220 feet long, and some of them, especially the vineries, are 25 feet wide. The business is purely a wholesale business, and the plants are grown to supply to the trade. House after house was filled with excellent plants of

Kentia species of Palms, *K. Fosteriana*, *Belmoreana*, and *Canterburyana*. They were in grand condition, showing that the plants had not been unduly forced, for they were sturdy specimens with deeply green leaves of thick substance. Besides the growing plants in various stages, it was estimated that there were 500,000 Kentias then germinating. Kentias are essentially market Palms, and Messrs. Findlay cultivate no other species, excepting *Livistona* or *Latanias*, as the market men still call the fan-leaved Palms. Of these latter there were four long houses of very pretty plants.

What impressed me most, however, was the tremendous stock of *Araucaria excelsa*. Thousands of these plants were seen, and scarcely one with its head an inch higher than the others. They were a remarkably even lot. It is also worth remark that one house was filled with such specimens from 3 feet to 4 feet high. Many houses contained Tomatos, heavy crops of a variety they call Findlay's Comet.

The vineries were pictures of good cultivation, the Vines rapidly finishing splendid crops of highly-coloured fruits. But let the crop be what it may, Mr. Findlay says that the low prices now obtained for best quality Grapes are not remunerative, and they will probably abandon Grape culture altogether.

Messrs. Findlay Bros. possess two great advantages. Their establishment is in a colliery district, and the price of coal is low. They have also a railway siding on the premises where twenty waggons can unload; this siding is five miles from the Glasgow station. On the face of it, it would appear a considerable advantage over the growers near London, but Mr. Findlay said he thought circumstances were about equal. He bought coal nearly two-thirds cheaper than Mr. Rochford could, but he burned nearly two-thirds more in bulk than Mr. Rochford, owing to the difference in climate. I ought to have mentioned that a good number of Ferns is grown, especially plants of the *Pteris cristata* major. The Palms are disposed of in various centres in Britain, and in Ghent and other towns on the Continent.

The history of the business is very interesting, and I will briefly describe it:—

About twenty years ago, perhaps more, Mr. Thomas Findlay, the elder of the two partners, was engaged in a stockbroker's business in Glasgow, and his brother Robert in a certain shipbuilding firm on the Clyde that built Sir Thos. Lipton's *Shanwock*. Thomas had a passionate love for plant-growing, and managed to get a little house built out of his own savings, where he grew Ferns and Palms. But he had a desire to adopt plant-cultivation as a business, and accordingly Mr. Findlay, senior, set out one day to consult with one of the heads of a seed business in Glasgow, who told him that if he permitted his son to go into nursery or market-gardening business it would mean ruin. So for a time the son's passion found no other outlet than he could contrive to make, in addition to following the business his father had chosen for him. He grew more plants, however, and sold some, and later was able to afford another house. Subsequently he was obliged to employ a man to tend them whilst he still followed his calling in the city. It is not surprising that at last the stockbroking work, so distasteful, was got rid of, and that success followed in a degree that warranted Mr. Robert also relinquishing his business in favour of joining his brother.

At present there are fifty men employed under glass. The nursery is on part of the firm the father used to hold, and which another brother now tills.

I have yet to add that Mr. Thomas Findlay acquired a farm at Tovil, near Maidstone, only two months ago, and has come to Kent to reside permanently, holding the belief that fruit cultivation of the highest kind, with the most careful gathering, packing, and grading, is an industry that may be followed with profit. In the meantime, Mr. Robert Findlay will manage the Baileston Nurseries, P.

(To be continued.)

ORCHIDS AT GATTON PARK.

In our issue of July 11, 1896, p. 27, we gave an exhaustive notice of the gardens of J. Colman, Esq., Gatton Park, near Reigate; and in that of Nov. 13, 1897, pp. 311, 343 and 317 three views in the fine gardens, together with some details as to the planting of the extensive property were given.

At that time the cultivation of Orchids was

pleasant to view on account of the vigour of the plants and the fine quality of the flowers. Here, as at Burford and some other gardens, the practice of employing the rhizomes of bracken instead of crooks is adopted, and to this some of the success attained is attributed. Thus one of the most important materials in Orchid culture which used to be wasted a few years ago, is eagerly collected, and when the supply obtainable from the plat in use is exhausted, it is purchased whenever possible. Some few *Odontoglossums* were in flower, including a fine form of *O. Harryanum* and another of *O. cirrosum*; also a batch of *Oncidium macranthum*, well furnished with spikes; *O. monachium*, *Mastcellia Veitchiana*, *M. Davisii*; and overhead a row of *Sophranitis grandiflora*, and a few plants of *Laelia monophylla* intended for hybridising purposes. The *Cymbidiums* are here grown cool, and *C. Tracyanum*, *C. Lowianum concolor*, and other distinct varieties were observed to be in fine condition.

The warmer houses are connected at one end by a lean-to range, placed against an existing wall, and the various divisions are heated at different temperatures, and the wall in each division is clad with showy flowering climbers and trailers, that are of use in furnishing the large quantity of cut flowers required at all seasons. The wall in the first division is planted with *Stephanotis floribunda*, *Begonia corallina*, and other showy plants, and *Dendrobiums* are suspended from the roof, of which *D. rhodostoma* and *D. chrysanthum* were in flower. The bed at the front of the house was occupied by compact plants of *Codiaeum*, with leaves beautifully coloured.

The second division contained a number of the almost perpetual flowering *Begonia Gloire de Lorraine*, the pillars were clothed with *Asparagus Sprengeri*, plentifully set with berries; and on the wall a plant of *Streptosolen Jamesoni* was in bloom, as also *Swainsonia galegifolia alba* and *Plumbago capensis*, all very useful for flowering in the winter.

In the central and larger division, plants of *Lapageria rosea* and *L. alba* were in bloom, also some well-grown ones of *Lotus peltorhynchus* were drooping over the stage; *Salvia Pitcheri*, one of the best blue winter flowers, and various other showy subjects. In the adjoining division an *Asparagus plumosus* was clothing the wall, and a fine selection of *Nepenthes* is cultivated, all of which were in excellent condition. Their crossing as opportunity offers is contemplated. Mr. Bound has already had much success in crossing the *Nepenthes*. The last division in the range is devoted to the cultivation of Roses, but any portion of the range is available for special classes of Orchids, or Orchids in a stage in which it may be deemed beneficial to give them a change of house.

In the first house entered from the connecting range, a number of fine *Dendrobiums*, both species and hybrids, were remarked. These were suspended from the roof, and among them were some fine forms of *D. Owenianum*, *D. Clio*, *D. Wiganiae*, *D. Cybele*, and other showy hybrids; *D. crassinode album*, and *D. aureum*, with very large and stout pseudo-bulbs; fine varieties of *D. nobile*, including *D. n. album*, and others. Suspended likewise from the roof were select varieties of *Laelia pumila* in flower, most of them being large and richly coloured; the varieties possessing a white ground being naturally the most cherished. Of these, *L. pumila Colmani* has bluish coloured flowers, with rose-purple markings on the lip; and *L. p. Gatton Park variety*, white flowers, with a peculiar bluish-purple front to the lip.



FIG. 107.—EUCRYPHIA PINNATIFOLIA AT CASTLEWELLAN.

EUCRYPHIA PINNATIFOLIA.

A FINE specimen of this highly ornamental leafy shrub (see fig. 107) has been in a mass of flower during the past month at Castlewellan, Co. Down, the seat of the Earl of Annesley. The plant is 8 feet in height, and 28 feet in circumference. The flowers, mostly in pairs, are 2 inches in diameter, pure white, with golden-yellow anthers; foliage pinnate, dark green. It is a native of Chili, a strong grower, and delights in a mixture of loam and peat, with about a third of manure from an old Mushroom-bed. *T. Hyatt*. An illustration of a flowering branch of natural size was given in our columns, September 11, 1880, Ed.]

being taken up, and some new houses built for these plants, and the whole of the glass-house arrangements re-modelled. These arrangements have been finished satisfactorily during Mr. W. P. Bound's charge of the gardens, and not only have the Orchids which were formerly grown made very satisfactory progress, but a large number of rare and valuable specimens, both species and hybrids, have been added to the collection; and great advances made in hybridising and in raising hybrid Orchids, a branch of gardening in which Mr. Bound appears to be very expert.

The *Odontoglossums* more especially have remarkably improved during the last two years, and the house devoted to these plants

The last-named has been propagated, and there are now several plants of it. So, also, the famous *Laelia anceps* Waddoniensis, perhaps the finest white *anceps*. The main plant has increased in vigour, and plants have been obtained by division. The collection of *Laelia anceps* is a select one, and the plants were well furnished with flower-spikes. In flower were remarked fine specimens of *Pilumna fragrans*, and its larger flowered variety *nobilis*; a grand specimen of the Gatton Park variety of *Zygopetalum Mackayi*, *Odontoglossum Bictense* album, O. Krameri, *Oncidium ornitho-hyechum album*, a large plant of *Cologyne speciosa*, which is seldom out of flower; this species has been crossed with *C. cristata alba*. Remarkable, though not in flower, were plants of *Cynabidium Traeyanum*, with fourteen leading growths; a fine *C. eburneo-Lowianum*, and other rare subjects which have been grown into fine specimens from quite a small size.

The next house, a spacious one, was filled chiefly with inely-grown *Cattleyas*, *Laelias*, and *Laelio-Cattleyas*. The plants of *C. Hardyana* thrive admirably here, and some handsome forms were passing out of flower. In flower were the last of the *L. tenebrosa* and *L. purpurata*, *Cattleya aurea*, *C. granulosa Schofieldiana*, and other *Cattleyas*; and the plants of *C. labiata* were making their winter display. Of these, *C. labiata* Master J. Colman is a very distinct and pretty form. We noted *Epidendrum vitellinum autumnale*, *Epiphronitis Veitchii*, *Miltonia Regnelli citrina* (Gatton Park variety), with yellow sepals and petals, and purple lip, which is by far the best of the yellow *M. Regnelli* which have yet appeared; and *M. spectabilis Moreliana*. Very vigorous plants of *Laelio-Cattleya* Captain Percy Scott and *L.-C. Henry Greenwood*, both favourites with Mr. Colman, were noted; also *Cattleya Skinneri alba*, *C. Trianae alba*, and other albinos.

In a sheltered, warm, moist house, the raising of hybrids and crosses is being successfully pursued, and the seeds seemed to have come up thickly in some cases. The method adopted is to prick them off as soon as possible into seedling pots, a number in each, and place these in a glass case; otherwise, if left for any length of time where the seeds germinated, the mortality amongst them is great. There were numerous interesting crosses coming along, the successes being all the more praiseworthy in that they have been accomplished in a very short space of time. In the same house some pretty plants of *Phalaenopsis Esmeralda*, and fine varieties of *Dendrobium Phalaenopsis Schroderianum* were in bloom.

At the end of another range, in which *Poinsettias* and other showy plants are grown, is a small hot-house, in which the *Phalaenopsis* thrive, a few of which were in flower. In an intermediate-house *Draecenas*, *Palms*, &c., were observed, among which varieties of *Sobralias*, including *S. macrantha alba*, were placed at intervals—an arrangement the latter seem to like.

In one of the vineries, in which the Vines (*Madresfield Court* and *Muscot* of Alexandria) were carrying a fine crop of Grapes, was a batch of *Vitis*, only just then brought in from where they had been standing in the open air, which appeared to be all the stronger for the change.

The large number of Peach and other fruit-houses, and the well-cropped kitchen-garden, were in excellent trim. Pears were plentiful and good, but Apples scarce, and generally very small.

AMERICAN NOTES.

EXHIBITION IN NEW YORK.

A GREAT horticultural exhibition has just closed in New York (October 21-27), and it is several years since the city has seen a large exhibition of plants and cut flowers. Horticulturally speaking, this effort has been an unqualified success, but as to its financial outcome I am unable at this time to speak positively. The venture was fathered by the New York Florist's Club, the representative trade organisation of New York; and, as it had the necessary funds to insure itself against loss, things will be satisfactory so far as they go. The Club set out to demonstrate the possibility of a great exhibition for the city, and it has triumphantly demonstrated its feasibility, that is all it sought to accomplish. It is more than probable that the effort will be repeated next year, and it is hoped to make the Fall Flower Show at Madison Square Garden an annual event. This Exhibition Hall consists of a large amphitheatre and arena, and is approximately of the same size as the Westminster Aquarium—a trifle smaller perhaps. It is devoid of all decorations, and there are no permanent attractions, consequently the exhibition has to stand or fall on its own merits. All things considered, the attendance was fairly good, for there are many distractions (chiefly political), and many of the well-to-do residents are not yet returned to town. I must, however, emphatically deny the extravagant imaginings of the London *Times* correspondent, who pictures us as living under a Reign of Terror—New York and London are much alike.

The one feature of the exhibition by which it will be specially remembered was the Palms and other foliage plants; these were truly excellent. The first-named were represented by some of the grandest specimens it has ever been my portion to see. There was a giant *Latania borbonica*, 24 by 21 feet, well furnished, and in the best of condition. This plant came from Mr. H. McKay Twombly's establishment, where Mr. A. Herrington is the gardener; and it was brought at no little trouble on a specially constructed truck and by road for thirty miles. It easily won the prize, \$15. At the close of the show this fine specimen went to the New York Botanical Garden.

Other fine Palms were a *Rhapis*, 10 feet high; and particularly noticeable for its gracefulness was *Phoenix Roebelinii*, a specimen 5 feet high, from Siebrecht & Son. This firm, W. A. Manda and Julius Roehrs, were the chief trade exhibitors of foliage plants, tree Ferns, and Bay-trees; Mr. Roehrs being the largest contributor, and winning the chief prizes.

Among private exhibitors, Mr. Waite, an Englishman, gr. to S. Untermyer, was also successful. Among private collections near New York, that of Mr. Willis James (gr., W. Duckham), also at Madison, N.J., is the most famous for being kept abreast of the time, and whatever is latest and newest in greenhouse or stove plants may be seen there. These treasures were freely exhibited at the Show, and the actual specimens could be compared with almost anything in Messrs. F. Sander & Co.'s latest catalogue. Specimen Ferns and Cycads, with great masses of India-rubber plants, were also prominent.

In the cut flowers the quality and size of the *Chrysanthemum*-blooms astonished us all; it was an early date for them, and the season itself is backward. Such varieties as Mrs. Henry Robinson, Mrs. Coombes, H. J. Jones, President Carnot, and its yellow sport; and

Yanariva, were as good as could be desired. All these were shown in vases for effect, and the blooms were generally shown in the usual American style, with long stems; but there were some blooms exhibited on boards, which I observed, attracted more attention and comment. I cannot but think that a *Chrysanthemum* exhibition should encourage both methods. The actual points in the flower can certainly be more easily compared on the show-board, and I believe that there will be a return to that method of exhibition. One-out-of-town exhibition, of which the schedule is before me, also provides for blooms to be shown on boards.

The new Tea Rose Mrs. Oliver Ames, which was seen in true character for the first time in New York, is a pink sport from Mrs. J. P. Morgan, and surely be of the greatest value for decorative purposes, since it shows up to advantage under artificial light. This was awarded the Silver Medal offered by the Society of American Florists for the best new plant of American origin. The Bronze Medal went to a new scarlet-flowered Carnation, "The Rose," exhibited by Mr. John May, Summit, N.J., but it originated near Boston.

Orchids were exhibited in abundance by both private and commercial growers. There was nothing of great rarity, the plants being chiefly *Cattleya labiata* and *Oncidium varicosum*. All of these displays were on circular tables of 10 feet in diameter. A beautifully made-up basket of Orchids was one of the finest pieces imaginable.

THE CONDITION OF THE FARM CROPS.

The anticipated shortness of crops has been realised. Potatoes, Apples, and Corn (Maize) are selling at high prices, but as the scarcity is practically universal, it is not the farmer who is suffering.

FRUIT.

An important experimental shipment of Pears and Peaches from the Eastern States to London has just been made by the Department of Agriculture. The fruit export trade of this class is chiefly from California, and the efforts of the Government to place the products of the Eastern part of the country on the foreign markets has awakened much interest. The fruit of the Pacific coast is certainly no better than that of the East, but it is marketed with more skill, and even in New York the Western produce commands a large share of the trade.

THE PAN-AMERICAN EXPOSITION AT BUFFALO, N.Y.

This has but a few days to live. To the horticulturist it has been an important affair; the florist and nursery trade has been well represented in the grounds, and permanent growing displays of their several specialties have been maintained. This department was under the direct active supervision of Mr. William Scott, a local florist of national repute, and he has worked hard to score a well-merited success. The assassination of the President naturally killed public interest in the exhibition, and it has not been brought to a conclusion with as much attention as was bestowed upon it earlier in the season. The one lesson to be learnt from the floral department was the possibilities of annuals. Water-Lilies were largely shown by Messrs. Dreer, of Philadelphia, on a scale that was most remarkable; there were hundreds of specimens. The Pomological Society held its biennial session in Buffalo in order to take advantage of the fruit exhibits; these were simply wonderful, as displaying the resources of the West, and never have I seen such

gigantic Plums as those that were shown from Oregon, which were as big as medium-sized Pears, and other fruits were in proportion. Truly, as was prophesied fifty years ago by Patrick Barry, the famous pomologist of New York, the Western States of America see the perfection of fruit raising as a commercial industry. A welcome European visitor

1890 (*Kew Bulletin*, 1891, pp. 131-2). The individual now noticed (fig. 108) was received from the Royal Gardens, Kew, on October 23, 1895. At the time of writing, it bears fourteen leaves on rather erect petioles; some of the leaves reach to 20 inches in length and 30 ins. across the blade. The segments of a leaf average thirty-eight to forty in number, and

plant it is, Dr. Morris informs me that the plant has become scarce at Anguilla. We have in the garden several dozens of small seedlings raised from seed sent to the gardens last March for propagation. Should our plant continue in its vigorous condition, seed ought to be obtainable for distribution at no very distant date. W. E. Broadway, Grenada, July 24, 1901.

FOREIGN CORRESPONDENCE.

ARBUTUS UNEDO.

I SEE from a note in the *Gardeners' Chronicle* that the fruits of the Strawberry-tree, *Arbutus Unedo*, L., are unknown in the London markets. Here, in France, these fruits are not infrequently sold and consumed. When the fruits are perfectly ripe and quite soft, so that they fall off the trees, they have a pleasant taste. Still, the fruits of *Arbutus Andraehne*, L., are better. Both, contrary to most Ericaceae, thrive well in a very calcareous soil, the first grows wild in quantity on a woody mountain slope, forming part of my property, and forms certainly the most striking ornament of the wild vegetation. These trees open their numerous white flowers, resembling those of Lily of the Valley, just at the same time as the fruits ripen, and the trees covered with flowers and bright red fruits, showing well against the glossy green foliage, they can at this time of the year compete in beauty even with the Orange-trees. If, as I have understood, the Strawberry-tree is hardy in all the milder parts of England, one should expect it to be planted in any garden where it can resist frost, especially as it will content itself and even prosper in the poorest soils. But when one considers how few of the most highly ornamental plants which, even in England, can give a tropical appearance to gardens as the Hemp-Palm, *Trachycarpus excelsus*, the Yuccas, the Cordylines, the Phormium, the Bamboos, &c., are to be found in the gardens there, where amateurs certainly are proportionately more numerous than in any other country, except in Japan, then one cannot wonder that here in southern France, where at least 100 species of Palms exist in the open, and some authorities think that up to 300 could do so, only about half-a-dozen species are to be met with in any numbers, and even some of the most exquisitely beautiful, and at the same time quick-growing and perfectly hardy Palms, as the *Cocos Romanzoffiana*, are still rarities, though specimens flower and produce good seed in abundance (germinating even naturally around the mother-plant in great numbers) for the last fifteen years. Nay, here at Nice, not even a single specimen of this remarkable Palm is to be found in any of the public gardens. A. Robertson-Proschowsky, Parc "Les Tropiques," Chemin des Grottes, St. Helène, Nice.

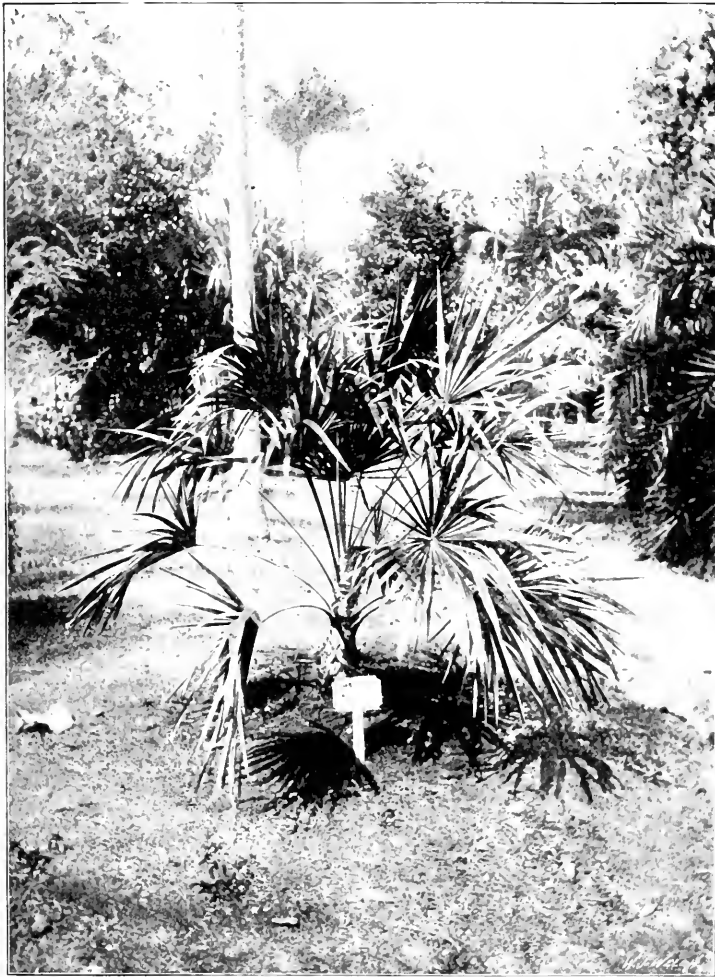


FIG. 108.—THRINAX MORRISII, IN BOTANIC GARDEN, GRENADA.

at the convention was Mr. Philippe de Vilmoisin, of Paris, who has been on a through tour to the Pacific Coast, and is now again in New York on his return journey. *Leonard Barron.*

THRINAX MORRISII, *Wendl.*

THERE is under cultivation in the Botanic Station of Grenada a healthy specimen of this Palm, which Dr. D. Morris discovered growing wild in the island of Barbuda, whilst making a tour of the West Indies in the latter part of

are never more than 1 inch in width. The total height of the plant is 40 inches, and its spread 48 inches. So far, no signs of flowers have made their appearance. It will be noticed from the dimensions given that this *Thrinax*, under cultivation, is likely to attain larger dimensions than in its habitat, where apparently it never attains a greater height than about 36 inches. With the aid of the photograph now sent (probably the first ever made of the species), taken by Inkerman Smith, Esq., a well-known artist of this island, it will be observed what a pretty and compact

The Week's Work.

THE HARDY FRUIT GARDEN.

By C. HERMAN.

Fruit-tree Planting.—In continuation of my remarks on the planting of fruit-trees, I give the following selection as being generally reliable in various districts: *Apricots*: Breda, a small, early variety; Moor Park, a large and small flavoured variety very generally planted; Henskirck, a large, hardy variety, somewhat resembling the preceding; Late Peach, a large and rather later ripening variety. *Desert Plums*: Early Greengage, Oullin's Golden Gage, Green Gage, Denniston's Superb, Transparent Gage, Jefferson, Kirke's,

Ickworth Imperatrice, Reine Claude de Bavi, Guthrie's Late Gage, and Coc's Golden Drop. *Culinary Plants:* Rivers' Early, Victoria, Pond's Seedling, Magnan Bonum, Diamond, Prince of Wales, Prince Englebert, Mitchellson's, and Monarch. *Dessert Cherries:* May Duke, Bigarreau de Schreeken, Black Tartarian, Elton, Frogmore Early Bigarreau, Black Eagle, Bigarreau Napoleon, large red, rather late; St. Margaret's, or Tradescant's Heart, a valuable late variety; and Noble, a large and very fine new variety that should find a place in the smallest collection. *Culinary Cherries* are Kentish Red, Flemish, Black Heart, Morello, and Belle Magnifique, a red Morello.

Planting Orchard-trees.—Where this work is to be carried out, a beginning should be made as early as possible; and if the ground has already been prepared, planting may begin forthwith. In forming a new orchard from land under cultivation, and given up entirely to fruit-growing, it is much to be preferred if the land be kept under the plough or light spade culture. Under this system, trees in bush or low half-standard form should be planted. I prefer the former, as these begin to crop early and afford some return for the first outlay, which is greater than when the orchard is composed of standard trees. As circumstances will decide the form to be adopted, this may be left to the planter; but due regard must be given in the choice of a site, and a position sheltered on the north and east sides, and with a slight slope on the west or south-west, should be selected if possible. In planting Apples and Pears of bush or pyramidal form, a distance of 12 feet apart should be allowed; and for a few years bush fruits or Strawberries may be grown between the rows. Most of the varieties recently enumerated are well adapted for this style of planting, but those varieties should be given a preference that are known to succeed in the district. If the planting is intended to furnish fruits for the market, the number of varieties should be restricted, and a few good varieties planted in large quantity. Standard trees should be afforded a distance of, at the least, 24 feet apart each way; and those of a strong growing, spreading habit, as Blenheim Orange, 30 or more feet apart.

Apples.—Good varieties for this style of planting are Keswick Codlin, Maux Codlin, Wellington, Beauty of Kent, Blenheim Orange, Bramley's Seedling, Tower of Glamis, Newton Wonder, Dutch Mignonne, Northern Greening, Lane's Prince Albert, and Autumn or Red Calville for kitchen purposes; while for dessert, Kerry Pippin, Devonshire Quarrenden, King of the Pippins, Juneating, Cox's Orange Pippin, Fearn's Pippin, Adams' Pearmain, Sturmer Pippin, and Allen's Everlasting, are suitable varieties.

Pears suitable for the orchard are Williams' Bon Chrétien, Louise Bonne of Jersey, Fertility, Burre's Clairgeau, Burre's Capiaumont, Burre's Bose, Blaz, and Fontaine d'Automne.

Steicing Pears.—The fruits of Catillac and Uvedale's St. Germain may be grown to an immense size, when the trees are grown on walls, although these and the other varieties named succeed either as bushes or pyramid trees. Others are General Tordleben, Bellissime d'Eliver, Vicar of Winkfield, Verulam or Black Worcester, and Winter Orange.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Orchids and Fog.—The plants grown in the neighbourhood of London and other smoky towns will have suffered greatly in loss of flowers from the recent fog. In my long experience in and near London I do not remember such a prolonged period of dense black fog as therecent visitation, and it is difficult to say what ill effects the fog may yet have upon the plants. Expanded Cattleya flowers, as well as buds out of the sheath, are destroyed; the flowers

of Oncidiums are destroyed, and the buds have taken on a yellow tinge. The older flowers of Cypripediums are but pulp, and the later flowers and buds are showing the ill effects, and will be lost when the sunlight at length reaches them. The plants themselves do not seem to have suffered, excepting that the older leaves decay quicker than would otherwise be the case. At this season keep the inside temperature as regular as possible, and the amount of moisture in the air very low; and it is more prudent to afford a slightly lower temperature in the warm divisions, and keep the air dry than to afford a high temperature and much damping down. Ventilation being very undesirable, it is difficult to retain the desired conditions in the houses, unless the degree of warmth is reduced to a reasonable extent.

Carlogue (Pleione) lacynaria, C. maculata, C. Wallichiana, and others which have passed out of flower, will commence to grow forthwith, and the potting of any plants requiring it should receive attention. These plants succeed in shallow pans suspended from or placed on shelves near the roof, and they are most effective when planted in masses. The pans should be well drained, and a compost used that consists of turfy peat, sphagnum-moss chopped up, a liberal addition of leaf-mould from the Oak, and silver sand. The distance at which the plants may be placed from each other in the pans will depend upon the size of the plants and the number of breaks to each pseudo-bulb, but about 1 inch apart will generally be found sufficient. The compost must be pressed firmly, so as to hold the pseudo-bulb in its place. The pans should be placed at the cooler part of an intermediate-house, and scarcely any water applied till roots make their appearance and the growths get well away from the base. *C. humilis* and *C. Hookeriana* do not flower till the new year, and these should be repotted as soon as they have flowered, and suspended in a greenhouse the whole year.

Odontoglossum-house.—The pretty *O. Rossi* and *O. R. majus*, whose flowers are beginning to expand, should be suspended near the roof, out of the reach of snails and slugs, which eat the flower-buds. The greater amount of light near the glass gives substance and high colour to the flowers. The flower-spikes of *Odontoglossum crispum* are unusually plentiful for the season, and must be protected from the small black slugs which quickly ruin them; small quantities of bran, brewer's grains, or oatmeal, placed on small crocks about the stage, attract them, and they may be easily caught at night. Cotton-wool wound round the base of the more advanced spikes will also help to protect the points and more tender portions of the seapes.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltmore, Poltmore Park, Exeter.

Ornamental Trees.—Flowering shrubs of moderate growth are *Casalpinia japonica* and *Hedysarum multijugum*, *Crataegus* of species, including *C. oxyacantha* var. Paul's double-flowered scarlet, and those with pink flowers; the Quinces are useful garden shrubs, with great white blossoms coming in corymbs. *Pyrus japonica*, *P. J. Maulei*, and *P. J. M. superba* should not be forgotten; they bear close clipping, and then form dense masses of bright colour. *Clerodendron trichotomum* is new, although we have had 9 of frost, it is full flower, and should not be overlooked; the flowers have not suffered from several nights of sharp frost. *Stytax obassia*, a distinct flowering small tree from Japan, has bright green leaves, downy on the lower surface, and of large size, giving the tree a striking appearance. I have not mentioned any of the ornamental-leaved Oaks, because unless the garden is of great extent these large trees should be very sparingly planted, the better place for them being the park adjoining. The same reasons hold good for excluding many other timber trees. There are, however, small-

growing, cut-leaved Beeches and Alders, golden-leaved Elms and *Acacias*, *Koelreuteria paniculata*, Tulip-trees, *Paulownia imperialis*, *Catalpas*, pyramidal Oaks, both green and variegated-leaved; pyramidal *Acacia*, *Celtis*, *Gymnocladia*, some of the small-growing *Gleditsias* and *Magnolia acuminata* that are almost indispensable in the garden.

Spring Bedding.—The various bulbs and plants used for this purpose should now be planted. When it is intended to plant bulbs in beds having carpeting plants of *Silene*, *Myosotis*, *Wallflowers*, *Linnauthes*, *Saponaria*, &c., the spots to be occupied by the bulbs should be indicated by conspicuous wooden pegs. Golden Feather, plants of which were used in the beds during the summer as an edging or carpet, still retains its yellow colour, and is of use in beds which are filled with old-fashioned spring flowers. If this plant does not harmonise with these, or is not suitably placed in the beds, it may be safely lifted and replanted. Only young plants should be utilised for this purpose, as they are liable to die off in the winter if old.

Cannas.—Plants standing in beds should now be lifted, the clumps labelled, and be placed in a cool, airy house or frame to dry somewhat before being stored away. If *Cannas* are required to flower during the winter, divide and pot some of them in retentive soil. The plants which have grown out-of-doors possess greater vigour than those which have stood in pots the whole season. Two varieties of *Canna* which have done well outside are *William Tolfts*, large salmon-coloured flower, edged with yellow, and dwarf in habit. The other is *Mrs. James Bailey*, rich crimson, growing about 3 feet in height, and very showy. The *Canna* is a good plant to use where rabbits have access, these animals not touching them; others similarly immune are *Nicotiana sylvestris* and *Abutilon Thompsonii*.

Peonies.—If circumstances have delayed the planting till this date, it will still be better to plant them than to wait till the spring.

Herbaceous Borders.—While the ground is in workable condition, the stronger growing plants may be lifted, divided, and planted in fresh situations. The manuring and digging of the border should proceed together with the lifting and transplanting. Vacant spaces may be planted with *Dafnolds*, *Hyacinths*, and *Tulips*, that were forced; *Wallflowers*, *Polyanthus*, *Myosotis*, &c. Plants of *Dracena Sanderiana* have been grown outside at Poltmore, and they have been exposed to 9° of frost, and beyond looking a little sickly, they do not seem to have suffered. In nearly every garden there is a demand for change and variety in the summer bedding; but these cannot always be afforded by simply ringing the changes upon the usual kinds of bedding plants, and any new plant which is hardy enough, and is of use in summer bedding, is a desirable one to plant.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peebleshire.

Pine-apples.—The plants in each department having been rearranged, and the glass made bright and clear, the growth of the plants may be encouraged throughout the winter; but sun-heat being essential to good progress, the plants should have a thorough rest by the gradual and considerable reduction of the amount of heat and moisture applied. The plants at this season are generally divided into three sections, viz., those with swelling and ripening fruit; those which have made their growth, and will afford fruit next year; and the suckers that were potted in the autumn. Fruiters which are afforded a good bottom-heat, and the leaves are close to the glass, should have a high temperature, 65° to 70° by night and 80° by day, or the fruit will not swell properly; and a humid air by damping down the walls, floors, and surface of the bed daily once or twice a day; and if practicable, the roof should be covered at night with some

non-conducting material. If this covering be fixed to rollers, it can be drawn down on the approach of storms by day, and always during the night in the winter. All plants with fruit swelling, slowly of course, will require water at the root occasionally, but no rule can be laid down for its application. Beginners in Pine-apple culture must guard against applying water in dribbles, which is always injurious. When soil in which a plant is growing has reached the dry side, enough water should be afforded as will moisten the entire mass, whilst its neighbour, perhaps only half dry, may be left over till the next examination. The bottom-heat being 80°—a suitable temperature for plants with swelling fruits, that of the water used for moistening the soil should be certainly 5° higher, especially when the warmth of the hot-bed is on the wane. When a fruit has reached full size, the pot may be mounded over with dry, warm tan or tree-leaves, and no more water applied at the root. The varieties Charlotte Rothschild and Cayenne will take more water without being injured than is good for the Black Jamaica variety.

Succession Plants.—The first batch now resting will hardly require, under ordinary circumstances, any more water at the root till the time arrives for starting them; but when danger from a too dry soil is apprehended, the tan or tree-leaves of which the bed is made should be moistened with tepid water, and pressed firmly round the pots. The bottom-heat may range from 65° to 70°; the top-heat, 60° at night, 65° to 70° by day, so as not to induce growth at this season. The plants intended to succeed the earlier Queens may be kept a little warmer and moister, as the most of them will make growth before they throw up fruit in the spring. Younger plants, which will not start until after mid-summer, must be kept close to the glass in light well-ventilated pits, where the roots will make progress during the winter. If the materials of which the bed consists are moist, very little water will be needed by these plants for two months, especially if the soil is of a tenacious nature. On the other hand, plants growing in 8 or 9-inch pots, which were fairly filled with roots last month, must be afforded water occasionally, otherwise premature fruiting may occur after they are potted in January.

Suckers potted in September, and removed from moist beds of fermenting materials, now that they are plunging in pits heated by hot-water, must not be afforded much water; but plants growing in small pots well filled with roots, and plunged over bottom-heat pipes, soon get dry, and must be carefully examined at short intervals of time, and water applied as soon as it is needed by any plant. It is prudent to keep the plunging materials moist by applying tepid water.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUNSEY PARK, Esq.,
Prestwold Hall, Loughborough.

Pits and Frames.—At this season the ventilation of pits and frames and the affording water to the plants therein must receive much careful consideration, or there will be great losses from damp. Water should be applied in the morning of fine days, and not any should be spilled needlessly, or the leaves of the plants wetted. Decayed leaves should be picked out from amongst the Violets, and plenty of air admitted to the frames on fine mornings, keeping them open till 2 or 3 o'clock. Should the Violets require water, let it be applied with a small-spouted water-pot, pouring the water between the rows and not over the leaves. If cocoanut-fibre refuse be spread on the soil after water has been affording for the first time, evaporation of moisture will be in great measure averted. Cinerarias should now be placed in the greenhouse or in a greenhouse pit having the means of keeping out frost. Cinerarias grow best if they are stood upon a stage or bed covered with fine coal ashes, and in a temperature of 40 to 45°. Plants of *C. stellata* are now showing

their flower spikes, and should be put into a house with a temperature of 50° to 55°, and be afforded weak liquid-manure water once a week till colour is perceived in the flower heads.

Campanula pyramidalis, &c.—Although sufficiently hardy to live out-of-doors, it is an effective plant in a pot. The plants that were potted some time ago should now be placed in a cold frame, and the pots plunged in tree-leaves. In wet or frosty weather the lights should be placed over the plants. The collection of bulbs of the Hyacinth, Narcissus, and Tulip should be examined, and those which have filled their pots with roots and made some amount of growth removed to a cold frame, the pots being sunk in coal-ashes to the rims. If this be neglected the roots of the Hyacinth will sometimes decay, if the soil in the pots gets dry. Bulbs not sufficiently advanced to remove to a cold frame should be replaced in the coal-ash bed. Layers of Souvenir de la Malmaison Carnations should be placed on the shelves in a greenhouse where the temperature does not get above 45°. The larger plants should be kept in a similar temperature, allowing a rise to 50° by day. Always afford a trifling amount of ventilation at night, with a slight warmth in the heating apparatus. Dry bracken, stable litter, and other protecting material, should from the present time be kept in readiness for use.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLFE,
Bilton, East-Endleigh, Devonshire.

Peas. There are gardeners who adhere to the practice of sowing seeds of early Peas in the autumn, though it is a matter of doubt whether anything is gained by the practice. And I know that for three or four months the seeds, and later the plants, are exposed to the attacks of mice, game and other birds, and slugs. On clayey soils it is useless to sow these early Peas, for although the seed may germinate capably, the plants make no progress during the winter months. Where the soil is warm and friable, and a broad south border exists, Peas may be sown at this date with some chance of success. The seed must be made moist with paraffin, and be coated with dry red-lead, as a safeguard against loss by mice. The seed should be sown more thickly and rather deeper than is customary in the spring, and it should be covered with refuse soil from the potting-shed.

Broad Beans. The foregoing remarks apply also to Broad Beans. Although a south border is not so necessary, still a position should be chosen where the plants are sheltered from east and north. The Early Longpod is a suitable variety to sow at this date.

Celery.—All Celery that has ceased to grow should be earthed up finally, leaving only the topmost leaves visible, and smoothing the top of the ridge with the back of the spade. The latest Celery should have a small quantity of soil put to it, but not so much as will bury the tops of the central or heart leaves. In times of severe frost, bracken or clean straw should be strown over the plants, removing this when mild weather ensues. Cardoons should be similarly protected.

Potatos.—Let all stores of tubers be examined now that the latest crops have been dug up, as whilst more or less damp, it is not always possible to detect diseased ones; and these, if left in contact with sound tubers, soon infect the latter. Tubers for the table should be kept in the dark, covering with straw or bracken if the store be not proof against hard frost. Clamps out-of-doors should be similarly protected.

Miscellaneous.—The open weather of the past fortnight will have been taken advantage of by the industrious gardener in hoeing and clearing the ground among the various crops, in the housing of beet-roots and Carrots, and charring of weeds and garden-refuse—the

ashes after sifting them being stored for use when sowing seeds in the spring. On frosty mornings, stable-manure, decayed dung-bed material, leaf-mould, or soot, should be wheeled on to vacant plots; and if the soil is stiff, digging and trenching may forthwith be begun. I prefer to bastard-trench the kitchen garden quarters, which if properly performed stirs the soil to a depth of 2 feet, i.e., deep enough to grow any kind of vegetable; and if the subsoil is poor, I lay some partially decayed manure at the bottom of the trench, and put another layer between the first and second spits, and all land dressed with soot or wood-ashes receives similar treatment.

THE APIARY.

By EXPERT.

Bee Keeping for Profit.—In my remarks on this important and growing industry, it will be as well, I think, to entitle our lesson "Bee Keeping for Profit." Before handling or going near bees, put on a veil, and some sound stout gloves. These give confidence, because you know the bees cannot sting you; and in all cases I should strongly advise beginners to have the assistance of some experienced keeper of bees. Having determined to keep bees, we naturally want to know how to commence, and the best method of starting; the answer to which is—keep them in skeps, or in bar frame hives. The former is rapidly dying out, on account of the difficulty experienced in looking at the bees to examine their condition; because you cannot very well turn up your straw stock to look at them, as by so doing you disturb them, and you cannot even then find out much about their state, or know whether they want feeding, much or little, as the case may be. With the bar frame hive, the state of the hives can be very easily ascertained, and that without having to disturb them much. Firstly then, should we decide to keep bees in skeps (as indeed should be the case if we commence with the bar frame), secure a nice clean skep, old ones are a great bother and a great risk, as well on account of the disease known as foul brood; and in purchasing a stock of bees, if you have not a friend near who will inspect them for you, ask the question of the seller before purchasing, "Are they free from disease so far as you know?" Having brought home the bees, place them in a sheltered position about a foot or 18 inches off the ground. Your next question is: What do I want the bees to do? do I want them to work for run-honey or for 1 lb. sections? This is most important, particularly if the honey is being raised for sale, because it is very little use to raise run-honey if you cannot sell it; and the same applies to the sections. If, then, you intend to raise run-honey, about the end of April or the commencement of May place a smaller skep over the top of the old and larger hive, and as soon as the bees find they have no room in the bottom hive or skep, they will go into the top one; and as soon as this is filled take it off, substituting an empty one for it. Should the bees swarm and you wish to increase your apiary, you should hive the swarm in the evening, and place it on its stand. If, on the other hand, you do not wish to do so, return them to the original stock. You must remember you cannot secure honey and a swarm as well. In placing on the super or small skep at the top, have a little dough placed around the old one first, so that the top one will fit closely and keep out the draught. Bees have a great dislike to draught, and any little place left they will first of all seal down, and as our seasons are so short, this would be a waste of valuable time which cannot be made up.

THE REV. DAVID R. WILLIAMSON, OF KIRK-MAIDEN, one of our Scottish contributors, has been elected an Honorary Fellow of the National College of Music in London.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thank his readers and send photographs on documents suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Nov. 16	Chrysanthemum Exhibition at Antwerp (three days).
THURSDAY, Nov. 21	Notfall and Norwich Horticultural Society's Chrysanthemum Show (three days). Leamington, Warwick, and District Chrysanthemum Society's Show (three days).
FRIDAY, Nov. 22	Aberdeen Chrysanthemum Show (two days).

SALES FOR THE WEEK.

EVERY DAY EXCEPT SATURDAY.—	Dutch Bulbs, at Protheroe & Morris' Rooms.
Bulbs, Pollexfen & Co.	
MONDAY, Nov. 19.—	Bulb and Plants Stevens' Rooms, and Johnson, Dymond & Son.
TUESDAY, Nov. 20.—	Nursery Stock, at Cole & Son, Bath—Roses and Shrubs, Pollexfen & Co.
WEDNESDAY, Nov. 20.—	Nursery Stock, at Non-very Kent, Protheroe & Morris—Bulbs and Plants, Stevens' Rooms, and Johnson, Dymond & Son—Nursery Stock, Regent Road, Dorking, Continental Plants, Roses, Stone and Greenhouse Ferns and Plants, Protheroe & Morris.
THURSDAY, Nov. 21	Nursery Stock, Upton Court Farm Nursery, Protheroe & Morris—Palms, &c., Pollexfen & Co.

(For further particulars see *Advertisement columns*.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Clonwick—41°.

ACTUAL TEMPERATURES.—

LONDON.—Nov. 16 (at 8 A.M.): Max. 57°; Min. 46°.
Nov. 17 (at 11 A.M.): Max. 51°; Min. 41°.
PROVINCES.—Nov. 16 (at 8 P.M.): Max. 46°; Scilly, 41°; 40°; of Tynemouth.

Taxing Gardens. THE inventors of taxes might very well form a section of the next book of SIGNOR LOMBROSO; the subject might, indeed, form an appendix to a new edition of this distinguished philosopher's *Man of Genius*. The psychology of the tax inventor has, we maintain, been unduly neglected, but this, like so many other "long-felt" wants, will doubtless be supplied in time. In the meanwhile, the tax inventor has just created a genuine sensation in Paris, where the determination of the Municipal Council to tax gardens seems perilously near taking effect. The tax is described as not one of gardens, but as one of "terrains non bâtis," which is the same thing under another designation. The antipathy of the French to direct taxation, and their extraordinary long-suffering of the inequities of indirect taxation, are facts too well-known to need comment. One could quite well believe that the French had long since exhausted every possible source of income in the way of indirect taxation, but such is not the case. The recent removal of certain *octroi* duties on goods, chiefly wine, entering Paris, has resulted in a heavy deficit, and some brilliant genius has sought to equalise this by suggesting the imposition of a tax on the private gardens in Paris. The tax amounts to an *ad valorem* one of 50 centimes for every 100 francs' worth of "terrains non bâtis," and by this means a revenue of about 4,500,000 francs will find its way into the coffers of the City Council. The tax will not affect those whose gardens

do not cover a larger area than that occupied by their houses, so that the very poor, who have no gardens at all, will at all events be exempt.

It has been calculated by a contributor to *Le Temps* that out of the 10,000 houses with gardens in Paris, only some 2,000 or 2,500 will fall within the scope of the new tax. This is not a very exhilarating prospect for those who have to make up the four and a half million francs. So far, therefore, from a large garden in Paris being a source of pleasure to the owner, and a distinct advantage to his immediate neighbours, it becomes under the new regulation a very serious burden. It is fully possible that instead of well-cultivated gardens, there will be howling wildernesses.

The iniquity of the tax is self-evident. But there is another side to the question, while those who are in favour of the tax, that is, those who have no gardens, or only very small ones, are emphasising for all it is worth. It is pointed out that when a rich *propriétaire* wishes to enlarge his town garden or park, he purchases the neighbouring house, pulls it down and adds the whole of the new place to his pleasure grounds. At one blow the city loses the whole of the taxes which it derived from the demolished mansion, and without receiving anything to balance the loss. From this point of view of course the new tax is neither so unjust nor so unreasonable an affair as it seems on the face of it; but it is the thin end of the wedge, and those who have had any experience of the elasticity of the tax-maker's conscience will fully realise that this new power will be exercised to the uttermost, and that we shall soon be informed of numerous instances of flagrant abuse. The difficulty in all these things is the initial stage: the persons entrusted with the carrying out of the law can be fully depended upon in seeing it observed to the letter.

Paris has many splendid parks and open spaces, but these are usually wide apart; and anything which, like the new tax, tends to reduce the number and extent of its private gardens is a grievous calamity. The low death rate and very high general state of public health in London are largely attributable to its innumerable private gardens, which are probably more numerous by a hundred to one than those of Paris, and we are certain that no one but a lunatic would suggest a tax on London gardens.

LINNEAN SOCIETY.—On the occasion of the evening meeting, to be held on Thursday, November 21, 1901, at 8 P.M., the following paper will be read:—Report on the Botanical Publications of the United Kingdom, as a part of the International Catalogue of Scientific Literature. By B. DAVISON JACKSON, F.L.S.

OPEN SPACES.—Last week, the Metropolitan Gardens Association offered to lay out Grayville Square, Clerkenwell, and St. Matthias' Churchyard, Poplar, as public gardens, subject to the maintenance being undertaken by the local authorities. It was also decided to assist in promoting schemes for the purchase of 16 acres of land at Southfields, Wandsworth, for £24,000; and of 15 acres of land at Deptford for £30,000, for the purpose of public recreation and playing fields—in each case the ground being needed to meet the wants of a poor and rapidly increasing district.

DUNDEE CHRYSANTHEMUM SOCIETY.—The forthcoming show to be held on November 21 and two following days, if we may judge by the inducements offered in the form of special prizes and Challenge Cups given by the Corporation of Dundee, and Mrs. GEO. ARMISTEAD, with other good prizes, will eclipse all former Chrysanthemum shows in Dundee. A so-called "Society group" will consist of select flowers and fruit supplied by the members of the Society, which will be sold during the show, and the proceeds handed over to the Dundee Royal Infirmary. Many of the leading firms in Chrysanthemum culture, north and south, will be represented. The music will be furnished by the band of the 2nd Battalion (Black Watch) Royal Highlanders.

RETARDING BULBS OF LILIU LONGIFLORUM.—It appears that our remarks upon the exhibit of retarded plants shown at the National Chrysanthemum Society's meeting by the Exors. of the late THOMAS ROCHFORD, have led some of our readers to think that it is not possible to retard bulbs of this fine garden Lily. We do not know why this should be, for our remarks read, "The variety of *L. longiflorum*," meaning *Harrisii*. It has been well known for several years past that *L. longiflorum* may be successfully retarded by cold, especially the form sometimes called *L. longiflorum giganteum*. The bulbs of the variety *Harrisii*, however, that have so far been subjected to the process have perished.

WEATHER LORE FOR NOVEMBER.—

- * Martelmass shall come again,
Spite of wind, and snow, and rain;
But many a strange thing must be done,
Many a cause be lost and won;
Many a fool must leave his self,
Many a worldling cheat himself;
And many a marvel come to pass,
Before return of Martelmass."—*Herrick*.
- ** If ducks do slide at Holland-tide,
At Christmas they will swim;
If ducks do swim at Holland-tide,
At Christmas they will slide."
- *** If there's ice in November that will bear a duck,
There'll be nothing after but sludge and muck."
- **** If the ice bear a man before Christmas,
It will not bear a mouse after." J. C.

A GLIMPSE OF CRANBROOK.—The Homelands Association's Handbook (21, Bride Lane, Fleet Street, E.C.), No. 19, is entitled a Glimpse of Cranbrook, the town of the Kentish Weald, and gives a useful account of the place and its vicinity. Mr. W. S. MARTIN mentions the means of access, the history and associations of the town, and describes the best excursions in the neighbourhood. The handbook has reached its second edition, and this fact is in itself a testimony to its usefulness and to the attractions offered to the visitor in this part of one of our most beautiful counties.

M. DE LA BASTIE, President of the Pomological Society of France, has lately died at the age of sixty-seven years. M. DE LA BASTIE was an enthusiastic gardener, who rendered valuable services to pomology. It was largely upon his account that the Pomological Congress of 1900 was not held in Paris, as was at first arranged, this causing many objections to be raised. M. DE LA BASTIE had served in the army before he entered upon his pomological work in his grounds at Pont d'Arche. He was President of the Société d'Horticulture de l'Ain. Many people think it likely that M. CH. BALLET will be selected as the new President of the Pomological Society of France.

THE "HURST & SON" MUSICAL SOCIETY.
—This Society, which has now entered upon its fourth season, will hold its First Ladies'

to the Gardeners' Royal Benevolent Institution. It is to be hoped that everyone interested will be present, and assist the Society

DISCOLORATION OF TOMATOS.—We should be glad to have the opinion of experienced Tomato-growers as to the yellow discoloration



FIG. 103.—MR. GODFREY'S NEW JAPANESE CHRYSANTHEMUM "QUEEN ALEXANDRA."
Colon tawn, slightly shaded with carmine rose. (See *ant.*, p. 25.)

Evening Concert in the Crown Room, Holborn Restaurant, on Tuesday, November 26. Several first-rate artistes have been engaged, and the committee have decided to give the proceeds

in augmenting the funds of this deserving Institution. Tickets, reserved seats, 1s.; unreserved, 6d. each, may be had from the Hon. Sec., 152, Houndsditch, London, E.

which is so common both in home-grown Tomatos and in those imported from the Canary Islands. At first we thought the yellow patches might be the early stage of

the spot-fungus, which is so destructive, but this view is not accepted by experts, who are not able to detect any trace of fungus in the yellow spots. We have received specimens from experienced growers whose method of culture is not to be improved on, and the discoloration occurs both in Tomatos grown out-of-doors and in those under glass.

HOME CORRESPONDENCE.

LARGE CROP OF TOMATOS.—I have read with interest the note on Tomatos by your correspondent signing himself "F. L. C.," on p. 312 of the *Gardeners' Chronicle*, and should be glad if he would kindly afford your readers some particulars of the system of culture whereby he obtains such a large crop as 20 lb. of fruit to a plant. He surely does not mean that he grew that quantity on plants growing out-of-doors, and even if he can succeed in getting that weight on plants grown under glass, his methods must be worth following. I quite agree with his statement that the Tomato-plant does not require much water when planted out. *T. Mathews, Wallham Cross.*

CUSCUTA EUROPEA PARASITIC ON IVY.—I recently found, on a visit to Trinity College Botanical Gardens, Dublin, a fine specimen of Dodder (*Cuscuta europea*), whose pale yellowish shoots were flung in confusion across a wall where *Hedera aurensis* was growing profusely, despite the unwelcome visitor. The Ivy appeared in full vigour, and where the parasitical plant had not become matted together, the Ivy was not seriously checked in growth. *A. O'Neill.*

ARBUTUS UNEDO.—It may interest some readers of the *Gardeners' Chronicle* to learn that the Strawberry-tree fruits splendidly in this northern garden. The trees are fifteen years old, and 6 feet high; there are hundreds of fruits on each tree. The flowers appear whilst the ripe fruits are still on the branches, so that we have white, red, and green on the trees at the same time. As material for filling flower-glasses, or for dinner table decoration, it is most useful. *G. Muir, East Lothian.*

JUGLANS NIGRA (BLACK WALNUT).—This noble and useful tree is one of our finest deciduous trees, and like many more fine timber trees, was more appreciated and more extensively planted 200 years ago than is now the case, or during the past century. The tree will thrive in almost any kind of soil, is of quick growth, and planted thick with other trees makes fine straight trunks. If planted in an isolated manner, or in exposed situation, the branches are apt to be broken by the wind. Although this tree is so valuable, yet how seldom is it met with, other than as an ornamental tree! Many nurserymen will tell you that as a tree for forest planting it is practically unknown, much less asked for. This is doubtless owing to the rage during the past sixty or seventy years for planting useless species of Conifers, many of which are only fit for making Christmas-trees, and useless as timber. The Black Walnut was planted at Albury on its introduction to this country, and in height the trees range from 60 to 90 feet, with trunks 10 to 12 feet in circumference. One tree cut down eight years ago was 100 feet high, with a straight trunk without a branch for 65 feet. This fine tree had to come down owing to its being too near a very large Cedar of Lebanon. The trees fruit very freely here in most years, and I would mention that I cannot agree with your able and respected correspondent, Mr. W. J. Bean, who writes that the Black Walnut only produces two fruits together. Here they are in clusters of from three, four, five and six fruits together. One large tree overhanging part of my cottage bears a big crop of nuts, and these nuts in falling break scores of tiles every autumn. I have heard the very absurd remark that grass will not thrive underneath

this Walnut, which is erroneous, as the grass under the trees is as green and healthy as elsewhere. In conclusion, I wonder this tree has not been used for planting in company with Planes in streets and public thoroughfares. *W. C. Leach, Albury Park Gardens, Godford.* [If the nuts be stratified in sand in a cold frame in late autumn, they will sprout during early spring, and may then be set out in nurse beds, at 1 foot apart. *Ed.*]

PLUM DRYING.—Your correspondent, "A. D.," does well to publish his precept in regard to "misleading statements;" but he would do better if he carried his precept into practice. In the second and third sentences of his article he attempts to mislead the readers of the *Gardeners' Chronicle* by suggesting that the price affixed to a sample of French Plums in the Worcestershire County Council's exhibit of dried produce at the Drill Hall, Westminster, on Tuesday, October 29, was too high, and therefore misleading. The sample of French Plums was bought in Birmingham, at the leading fruit merchant's shop, about a month ago, it was the only quality there offered for sale, and the price paid for the Plums was 10d. per lb. The sample was placed in the exhibition case (also a sample of Californian Plums, bought at 6d. per lb.), with twelve other varieties of Plums, home grown and home dried, for comparison therewith. It was labelled "French Plums, bought at 10d. per lb.," and I have yet to discover how those words constitute a "misleading statement." If the price had been marked higher, or lower than 10d. per lb., it would have been both misleading and untrue. I have recently bought some dried French Plums at 6d. per lb., and compared them with those for which I paid 10d. per lb., and with the Victoria Plums, which "A. D." so picturesquely describes as having had their skins "dried to exceeding toughness." Taking fruits from each sample at random, I found that the skin of the best French Plum was just a little less tough than the skin of the Victoria, and the skin of the cheaper French Plum was as tough as the Victoria; but the latter surpassed the former in fleshiness and flavour. Moreover, I found, on comparing the samples of French Plums one with the other, that the better sample was so much superior in quality to the other, that it was as well worth 10d. per lb. as the inferior was worth 6d. per lb. The manager of the shop from whence I purchased the samples of French Plums, informed me yesterday (November 9) that they often sell French Plums at 1s. and 1s. 2d. per lb. I do not see why Victoria Plums should not be dried and sold retail at 6d. and 8d. per lb. They are a sounder and more wholesome fruit than the French Plums sold at 6d. per lb. *J. Udale.*

PHYLLOSTACHYS NIGRA.—Three plants of this very distinct Bamboo have been flowering this year in the collection at Batsford Park, Gloucestershire, the whole of the culms on two being covered throughout their length. There are other plants in the same group of similar age and size, and many more of the same species in various sizes grouped in other positions, but on none of these have flowers been observed. It is to be hoped that flowering will not become a general habit with these plants just when they attain their greatest height, and should in consequence be most effective and ornamental. The whole stock of *P. nigro-punctata* flowered last season, but no seeds have ripened on this or on the type this year. *J. G.*

CEROPEGIA STAPELOIDES.—I am at a loss to know why this plant, instead of growing upwards, or twining, should turn down over the pot. I have been growing plants of it for many years, but not in this form, downwards. This one was a seedling, and rotted, and then was re-struck, and this is its style. Is it a new freak? It looks, to my thinking, much darker in its colour than the old ones I had. There is another, about 2½ or 3 ft. long; one shoot ran straight along on the pots of other

plants, and on the shelf, and it got into the darker parts under the shelf; but it does not look up to the light, but turns, like the other, down. I have not attempted to train it, as the shoots would break off. I put one piece upright, and that has made about 2 inches of growth, and seems to say—I have done. It looks flat on the end, as if its growth upwards was not what it liked; it has not flowered, not having made any flowering growth; perhaps it may be something strange when it does so do, if it ever does. I am interested in its style, and hope to see its flowers, if any. *J. C.*

BIRDS AND INSECT LIFE.—I was much interested in Mr. Harrison Weir's article on "The Cuckoo and other Birds," p. 310, *ante*. No doubt others besides myself have also noticed, and with sorrow, this almost complete absence of antagonism between birds and caterpillars, especially when these insects infest Brassicas and Gooseberries. This absence of antagonism is all the more remarkable when one sees birds chasing the White Cabbage Butterfly, presumably for dietary purposes, as the latter flit about egg-laying. May it not be that the caterpillars are poisonous, or at least distasteful, and the birds know it? *A. C. B.*

EXHIBITING FRUIT.—How are exhibitors to know how to exhibit fruit, i.e., Pears, when the schedule reads "All dessert fruit fit for table;" and yet in the 1st prize six dishes of Pears at the Royal Aquarium, Beurre Clairgeau, which is not even a second-rate variety as regards quality, were shown; and a dish of B. Bacheleur was quite unripe, requiring a period of three weeks before it would be fit for table. The fruits of Doyenné du Comice had but very little colour, and would not be ripe for three weeks unless hurried on by heat. The judges, in my opinion, must have valued size, and not ripeness or fine quality. The six dishes that took the 2nd prize were of even size, and consisted of fruit of good quality, ripe, and fit for consumption, in accordance with the schedule. I should like to know the reason why the judges went away from the wording of the schedule. *Visitor.*

Obituary.

MR. A. H. SMEE.—Horticulture has suffered a notable loss in the death on the 8th inst. of this gentleman. His residence, The Grange, Blackbridge, near Carshalton, was well known in horticultural circles as "My Garden," the name by which it was designated by its founder, Mr. Alfred Smee, the father of the late proprietor. The book prepared by Mr. Alfred Smee under the same title was an encyclopedic account of the garden, and all that pertained to it; and as it was written by a man who possessed an unusually wide acquaintance with all branches of science and natural history, and one who was in addition an enthusiastic gardener, it will remain a valuable book of reference for many years to come. To the possession of this garden, Mr. A. H. Smee succeeded at the death of his father, and in his hands it lost nothing of its reputation, while in the matter of Orchid-growing its character was enhanced. Mr. Smee was one of those who proved the advantages in some cases of the open-air treatment of Orchids during the summer. Mr. Smee also took much interest in fruit culture, allotment gardens, and in the diffusion of horticulture and its benefits among the working classes and other members of the community. He was an accomplished chemist, and turned his knowledge to good account in his researches on the chemical constitution of Orchids, the purity of water, the utilisation of sewage, and the prevention of epidemic disease. He was the medical adviser of the Gresham Life Assurance Society, and was an authority in certain matters connected with life assurance. Of the Royal Horticul-

tural Society and of its Orchid Committee. Mr. Smee was an active member, and it was, in a large measure, owing to his efforts that the anomalies and trammels of the old charter were replaced by the more modern and liberal provisions of the one under which the Society is now regulated.

KOCHIA SCOPARIA.

This plant, one of the weedy family of Chenopods, has been exhibited at the Royal Horticultural Society on several occasions this

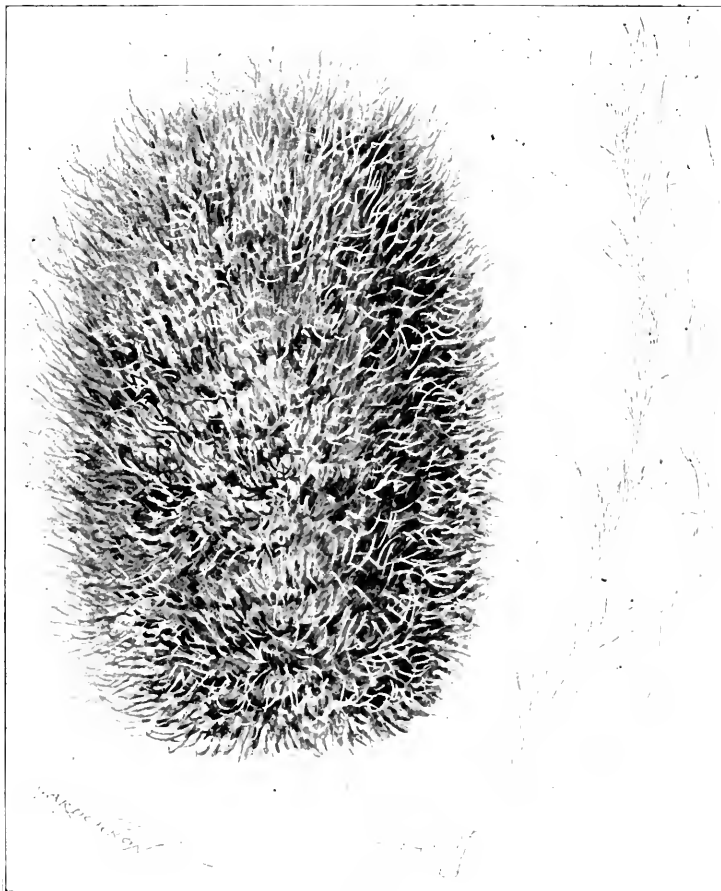


FIG. 110.—KOCHIA SCOPARIA: LEAVES GRASS-GREEN, CHANGING TO CRIMSON.

year. It forms a dense, compact bush, with ascending branches, and linear leaves of a green colour, till autumn tinges them of a reddish-crimson colour. As seen in its summer guise, it attracted but little attention, except as a curiosity; but when it was shown in its autumn panoply of purple, it commanded universal admiration (fig. 110).

It will be remembered that many of the Chenopods, and Spinach-like plants, assume a similar coloration. The flowers are inconspicuous. The plant was shown by Messrs. H. Cunnell & Sons, of Swanley, Kent, at a meeting of the Royal Horticultural Society on Sept. 10, and gained a First-class Certificate.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 11.—At a meeting of the Floral Committee, on Monday last, awards were made to the two varieties following.

Chrysanthemum *var. The Beacon*, S. G. Ford.—A yellow Japanese flower of a bright but not deep shade; the florets loosely incurved and curl. Shown by Mr. PENLID, Lough Park gardens.

Chrysanthemum *var. The King*.—A large Japanese flower, of deep amber colour. Shown by Mr. H. WEEKS, Thrimpton Hall gardens, Derby.

ALEX. DEAN moved a resolution calling upon the Council to take action in reference to a statement which appeared in the *Journal of Horticulture* criticising an award made by the Fruit Committee at the last meeting. The resolution was carried, but not with absolute unanimity.

The LECTURE in the afternoon was by Mr. NEWSTEAD, of the Grosvenor Museum, Chester.

Floral Committee.

Present: Mr. W. Marshall, in the chair; and Messrs. C. T. Dreney, G. Nielolson, J. Walker, G. Reuther, J. F. McLeod, J. Jennings, C. Dixon, W. Bain, C. E. Shea, W. P. Thomson, E. H. Jenkins, G. Paul, and H. B. May.

Begonia *Gloire de Lorraine* and *B. Caledonia* were shown splendidly in a group of plants from F. D. LAMBERT, Esq., Moor Hall, Cookham (ex Mr. J. Fulford). These plants numbered about two dozen specimens in 5-inch pots, and represented most successful cultivation. The type was grand, and the white-spotted *Caledonia* has never been exhibited in so good a condition (Silver Banksian Medal).

Messrs. T. S. WYLLI, Ltd., Hill Farm Nurseries, Feltham, exhibited a collection of varieties of *Nerines* in flower. The variety *Fothergilli* was the brightest of them all, but several very pretty seedlings raised by the firm are well worthy of cultivation. An effort is being made to obtain varieties that will flower rather later than most of the present ones. Among the seedlings, Mrs. Koutlie, Kitty, Beautiful Star, and Prince of Orange, are all attractive.

MESSRS. H. CUNNELL & SONS, Swanley, Kent, exhibited a collection of nearly thirty bunches of decorative varieties of *Chrysanthemums*, including such varieties as White Thread, *Acheloidemum*, and Goldenrod Faden, with very curious thread-like florets; others were Pink Niveum, *Eleganz*, a single variety with very long, drooping florets of bluish-pink; Mrs. Gus Trollop, a rosy-lilac-coloured seedling from Cape Colony; Mrs. W. J. Hartin, a large single flowered variety, reddish-brown, with yellow band around disc; Dorothy, a bluish single; G. W. Forbes, fine crimson single; Star of Honour, white single; Arab, a very curious red and yellow coloured variety, with drooping florets; and Mrs. Brown Potter, white single.

MESSRS. W. WELLS & Co., Earlswood Nurseries, Redhill, Surrey, exhibited a large collection of exhibition *Chrysanthemum* blooms. Most of the novelties we have seen already this season, such as W. R. Church, Madame Herwegg, Mrs. T. W. Pockett (one of the best Japanese of the season), Marquis V. Venosta, Lord Lindlow, Matthew Smith, Mrs. Barkley, Mrs. G. Milham, C. J. Salter, &c.; but the blooms shown of each of these varieties were of grand size and quality. There were one or two unnamed seedlings staged, and several novelties that will be heard of again. A collection of bunches of decorative varieties, including single flowers and others useful for furnishing vases (Silver-gilt Banksian Medal).

MR. J. SLEMAN, Victoria Nursery, Beckenham, exhibited a group of plants of *Begonia* *Gloire de Lorraine*. Also a group of *Chrysanthemums* in pots, composed of decorative or market sorts. The plants had been grown in the open ground, and lifted a few weeks ago and put into pots. The plants had held their foliage well, were very dwarf, and many of them had more or more good blooms (Silver Banksian Medal).

MESSRS. JAS. YETTS & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a grand group of winter-flowering *Begonias*. They made a much brighter display than on the last occasion, and more varieties were shown. There were Mrs. Heal, Winter Perfection, and John Heal. The last named variety is dwarf in habit than the others, and the leaves and flowers are much less in size also. These hybrids between the fibrous and tuberous-rooted *Begonias* are excellent winter-flowering plants, and have been described many times in these columns. Mrs. Heal is by far the most showy variety (Silver Banksian Medal).

Flowers of the old-fashioned *Gloriosa superba* were shown by Mrs. EVANS, Forde Abbey, Chard (ex Mr. J. Crook).

Dr. BOSNIA, Worthing, showed a few *Chrysanthemum* blooms, grown out of doors in that town, and showing that little frost has visited the district yet.

SIR THOMAS LAKE & Co., Earl (ex Mr. Bonn), showed blooms of an incurved *Chrysanthemum*, *Mille Marie Lager*. The variety has lilac-pink coloured flowers of large size.

J. COLMAN, Esq., Galfon Park, Surrey, exhibited a plant in flower of *Vallota purpurea*, said to be a hybrid between the *Vallota* and *Crimum Moorei*; but we could discover no evidence of hybridity.

ROYAL HORTICULTURAL.

NOVEMBER 12.—At a meeting held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster, there was a very poor display of exhibits. Not a single award to a novelty was recommended by the FRUIT and FLOWER COMMITTEES, and only six Medals.

The FRUIT and COMMITTEES had not so fruitless a sitting, for it recommended awards, including four First-class Certificates and three Awards of Merit, in addition to three Medals.

The attendance of visitors was less than usual, and even the committees themselves (especially the Fruit and Vegetable Committee) had but few members present.

Before the members of the FRUIT COMMITTEE Mr

Orchid Committee.

Present: HARRY J. VEITCH, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. M. Pollett, H. Ballantyne, W. Cobb, R. Brooman-White, F. A. Reider, E. Hill, W. A. Binley, H. J. Chapman, W. H. Young, J. W. Potter, F. Sander, H. A. Tracy, H. Little, J. G. Fowler, and M. Peeters of Brussels.

JEREMIAH COULMAN, Esq., Gattin Park, Reigate, was awarded a Silver Flora Medal for an effective group consisting principally of fine varieties of *Cattleya labiata*, some of which were exceptionally large and finely coloured, especially the variety "Empress." With them were the pretty white *Lælia pumila*, "George, Prince of Wales," a distinct form with white sepals and petals, over which was a delicate bluish tint. The labellum had a small purple mark on each side, which gradually changed to pale rose towards the front; *Cattleya aurea*, *Epidendrum vitellinum*, *Odonotobosium*, Humeanum, cut spike of three forms of *Lachnæ-Cattleya* × *Schilleriana*, two *Cymbidium Tracyanum*, *Lælia anceps*, &c.

G. TAYLOR, Esq., Morgery Hill, Reigate (gr., Mr. W. Seaman), was awarded a well-merited silver Banksian Medal for a group of three fine specimens of *Dendrobium noble* well furnished with flowers, and which had been treated in the open-air in summer as described in the *Gardeners' Chronicle*, November 2, p. 329. This mode of culture is well worthy of attention, for by it the flowers are produced at a time when they are much more valuable than at the ordinary season. Spikes of a fine variety of *Cymbidium giganteum* and *Cattleya labiata* were also in the group.

Messrs. Jas. Veitch & Sons, Chelsea, showed a small group of the true *Cypripedium insigne* Sandersii, all propagated from part of the original. One plant bore seven flowers (silver Banksian Medal).

Mr. Srs. CHARLESWORTH & Co., Heaton, Bradford, showed a pretty variety of *Lælia-Cattleya* × *Guttatiana*, raised at Heaton; *L. C.* × *Helena* L. *chambariana* × *C. Schilleriana*, a singular hybrid, with yellow sepals and petals tinged with brown, and claret purple-marked lip; *L. C.* × *Lælia* (C. Harrisoniana) × *L. harpophylla*, with small clear white flowers; and two other fine hybrids (see Awards).

M. A. PEETERS, St. Gilles, Brussels, showed *Cattleya* × *Whitei*, *Bone* raised, *Cattleya* × *Goossensiana*, *Lælia* × *Lona*, *Peeters*' variety; and *Cattleya* × *Mantini*, *Peeters*' variety—all good, showy forms.

T. A. BEVAN, Esq., Trent Park, New Barnet (gr., Mr. Farr), sent *Odonotoglossum crispum* Trent Park variety, a pretty spotted form of the *O. C. guttatum* class.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed *Lælia-Cattleya* Frederick Boyle (L. *anceps* × C. *Trianae*), *GIRSKY* Wri-sax, Esq., Mayfield, Christchurch Road, Streatham Hill, sent *Cypripedium* Lecanum giganteum.

"The Honourable WALTER TORRIS HILL, M. P., Tring Park (gr., Mr. E. Hill), showed the very remarkable and ornate *Cirrhopetalum Rothschildianum*, with upper sepal and petals beautifully fringed with purple, crimson, on the lower sepals extended into slender tails of a cream-white tint, heavily banded with crimson-purple. It was awarded a First-class Certificate Oct. 15, 1901, and a natural size illustration of plant and flowers was given in the *Gardeners' Chronicle*, Nov. 23, 1901, p. 609.

De BARRI CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed *Cymbidium Tracyanum* Crawshawianum.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegg), showed a fine plant of *Cattleya* × *Whitei* "J. Bradshaw," with three flowers: *Lælia-Cattleya* × *Decia*; *Cattleya labiata* "Angel," pure white, with a purple blotch on the lip; and *C. labiata* "Araduc," white, the lip of a light purple tint in the front, with dark purple veining.

Mr. JOHN CROOK, Forde Abbey Gardens, Chard, showed two very profusely-flowered plants of *Cypripedium insigne*.

Awards.

FIRST-CLASS CERTIFICATE

To *Lælia callura* × *Duchassa-Mendelii* "Hesse variety," (L. *Duglyana* × C. *Mendelii*). The finest of a very valuable hybrid, sent by W. P. BUCKINGHAM, Esq., The West Hill, Hesse, near Hull (gr., Mr. W. Barker). The flowers were very large, and finely formed, the lip with its pretty fringe being finely developed, flower of bright rose colour, the centre of the lip soft yellowish-pink, the base having some purple lines. A very remarkable flower of charmingly soft tints.

Odonotobosium crispum "Royal and Crawshaw," from DE BARRI CRAWSHAW, Esq., Rosefield, Sevenoaks. This magnificent blotched *Odonotoglossum crispum* was first

shown by Mr. Crawshaw, May 7, its flowers then being scarcely mature. It was given an Award of Merit. Since that time it has grown strongly, and again in a period of six months produced a strong inflorescence. The flowers are large, all the segments broad, white, strongly tinged with purple on the reverse side, the colour showing through to the surface. The sepals and petals bear many showy blotches of a peculiar bronzy-orange tint, and quite different to the markings usually seen in *O. crispum*.

Sophia-Cattleya *Sophia* (S. *grandiflora* × C. *calumantia*), from Messrs. J. CHARLESWORTH & Co., Heaton, Bradford. Flowers of a uniform dark scarlet colour with some small purple spots on the sepals and petals.

AWARDS OF MERIT.

Cattleya × *Whitei* *Paris* (Gaskelliana *virginale* *superba*), from Captain HOLLIFORD, Westonslart, Tebury (gr., Mr. A. Chapman). A very pretty hybrid, equal in size to *C. Gaskelliana*, but with the firmer texture and some of the features of the lip of *C. superba*. Sepals and petals light rose colour; disc of the lip unusually large, and of a bright dark yellow, front, purple, changing to rose towards the margin.

Odonotoglossum × *crispum* *Hargreaves* *norman*, from W. THOMPSON, Esq., Walton Grange, Stone, Stafford (gr., Mr. Stevens). Sepals and petals rose coloured, blotched with red-brown, lip, white, with purple blotches at the base.

Lælia *Whitei* × *Laminosa* (L. *tenebrosa* × C. *aurea*), from Messrs. CHARLESWORTH & Co., Heaton, Bradford. Sepals and petals straw coloured, tinged with purple, lip large, rosy-lilac, veined with purple.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Joseph Cheal, S. Mortimer, Alex. Dean, Geo. Kell, H. Markham, F. Q. Lane, Geo. Wythes, Jas. H. Veitch, and R. W. Wilks.

A collection of Apples and Pears, which included some 120 dishes, was shown by Mr. A. J. THOMAS, Radmeston, Sittingbourne. This was a very commendable collection of varieties, which was deservedly awarded the Hog Memorial Medal. Mr. Thomas grows fruit for market, and though the fruits staged were not comparable with those shown on the last occasion by Mr. Woodward, they were considerably better than one often sees in the market.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S. E., and Gifford, Kent, exhibited a collection of Apples, including culinary and dessert varieties, in about 100 dishes. Some of the dishes of fruit were of very high quality, especially the following: Cox's Pomona, Blenheim's Red Winter Reinette, Cox's Orange Pippin, Beauty of Kent, Bismarck, King of Tomkins's County, Mere de Metz, Tom Pitt, Peasgood's Non-such, Worcester Pearmain, Tyler's Kernel, Lord Derby, Lauree, Prince Albert, Blenheim Orange (very fine in colour), and Gasconne's scarlet (silver-gilt Knightian Medal).

Three good, well-soured bunches of Black Alicante Grapes were shown by Mr. JOHN CROOK, of Forde Abbey Gardens, Chard, and a Cultural Commendation was awarded.

Some Potato tubers of extraordinary size were shown by A. E. PHILLIPS, Esq., Old Holly Hall. These tubers were monstrous, and fit only for feeding cattle.

Apple Brockhampton Beauty, shown by A. W. FOSTER, Esq., Brockhampton Court, Ross, was a highly coloured fruit of attractive appearance; and R. M. WHITEING, Esq., Credenhill, Hereford, showed Credenhill Pippin Apple, but neither of these varieties were awarded any distinction.

The Committee and the Press.

Mr. A. Dean moved the following resolution, which was carried with one dissentient.

"This Committee, having heard read the false and calumnious imputations on one of its awards made at the meeting held here on the 29th of October last, and published in the *Journal of Horticulture* of October 23rd last, calls upon the Council of the Royal Horticultural Society to take such immediate steps as shall be needed to obtain from the proprietor of the said paper an ample apology for the publication of such unwarranted aspersions, and thus vindicate the Committee's honour and integrity."

As a consequence of this resolution, the following letter has been published on behalf of the Council—

"Resolved: That it be entered upon the Minutes and communicated to the Chairman of the Fruit and Vegetable Committee, that the Council of the Royal Horticultural Society have

full confidence in the perfect impartiality and absolute integrity of the Committees of the Society."

A fitting explanation having been given of the unfortunate incident, we trust we may hear no more about it.

The Lecture.

"INSECTICIDES, SPRAYING FOR FUNGI, &c."

The lecture upon the above subject, by Mr. Newstead, of the Grosvenor Museum, Chester, was read by Mr. Pearson in the absence of the lecturer. Mr. Newstead referred to the new fruit-free Tortrix (*Penthina variegana*), described and illustrated in *Gardeners' Chronicle*, June 1, 1901, and quoted therefrom, also giving details of further experience in respect to its treatment. New and valuable information was given upon the life-history of the Pear-tree slug-worm, and the best methods explained of eradicating it. Speaking of mealy-bugs, reference was made to several interesting subterranean species recently discovered, and information given upon the best means of destroying the pest when infesting the roots of Ferns and other plants. When the whole of the paper is published in the Society's *Journal*, it will form a valuable contribution to this subject, in conjunction with that upon scale insects by the same author, read on October 10, 1901, and published in the Society's *Journal*, vol. xxiii.

IRISH GARDENERS'.

At the winter session of the above Society, held recently at their quarters, Grafton Street, Dublin, Mr. F. W. BURBRIDGE, M.A., F.L.S., lectured on "The Progress of Garden Craft," the lecture being illustrated by 70 illuminated views, kindly lent by the chairman and Prof. Johnson, D.S.C. At the outset, his remarks were devoted to a sketch of the history of their Society, dwelling on the tercentenary of the Potato, organised by them, as being their biggest effort, and from whence flowed much good, and he then proceeded with the essential factors of plant life, explained the formation of varied kinds of soils, dealt extensively with plant life in the tropics, and then with some prominent leaders in horticulture, alluding to the late Thomas Reichenow, especially in reference to retarding bulbs and plants. Then followed a brief note of the botanists, whose labours have been of immense assistance to horticulture. Before the close of the meeting, a hearty vote of Thanks was passed to the lecturer and the chairman, and the meeting adjourned. A. O'NEILL.

FINCHLEY CHRYSANTHEMUM.

OCTOBER 31 and NOVEMBER 1.—The sixteenth annual exhibition of Chrysanthemums, fruit, and vegetables of this society was held on the above dates, and considering the rather early fixture, the array of cut blooms was excellent, although several of the best specimens would have been in greater perfection a week later. The competition in most of the numerous classes was very keen, and the quality very good. The leading class, in which a handsome silver cup was added to good money prizes, was for four vases of specimen Japanese blooms, distinct, cut, vase containing five blooms of one variety, shown together with chrysanthemum foliage upon separate stems. Four competed, and the 1st prize with cup was awarded to Mr. W. RING, gr. to J. WARREN, Esq., Waltham Cross, the varieties being Mrs. Mease, Madame Carnot, M. Chénon de Leche, and Mrs. Coombes, and each bloom 2½ in. diameter. The 2nd, with £5, was given to Mr. S. BARKLEY, gr. to J. WARREN, Esq., Waltham Cross, the varieties being Mrs. Mease, Madame Carnot, M. Chénon de Leche, and Mrs. Coombes, and each bloom 2½ in. diameter. The 3rd, with £5, was given to Mrs. BARKLEY, Australia, and Lady Hanham; 3rd, Mr. SANDFORD, gr. to G. WITCHING, Esq., S. Finchley.

With twenty-four Japanese blooms, Mr. W. J. CLAR, gr. to F. D. THOMAS, Esq., was a good 1st with large blooms, although some were scarcely fully developed. His 2nd were Mrs. Mease, Le Grand Dragon, Simplicity, Mons. Chénon de Leche, Phœbus, Nellie Pockett, Lady Hanham, and Lionel Brough; 3rd, Mr. BROOKES, with a nice stand of smaller blooms; 2nd, Mr. BENNETT, gr. to J. B. BISHOP, Esq.

Another class was for twenty-four blooms, twelve incurved and twelve Japanese, the 1st prize going to Mr. A. JONES, gr. to Miss WYBEN, who was very strong with incurveds, having extra fine blooms of C. H. Curtis, Duchess of Fife, Globe d'Or, Mrs. N. Mulvany, Mrs. Barkley, and Jean d'Arc. His best Japanese were Mrs. Barkley, Theo. Wilks, Mrs. Mease, Lionel Brough, Le Grand Dragon, and Mr. T. Carrington. Mr. RING was a close 2nd with better Japanese, but lost points with his incurved blooms.

Two classes for twelve Japanese, open to members and "single-handed" gardeners respectively: the competition was best in the latter, six competing. The 1st prize went to Mr. J. CHILDS, gr. to Mrs. FOSCO, 2nd, Mr. MARTIN, gr. to Mr. WATSON. Of the first-mentioned twelve, the 1st prize was taken by Mr. J. KIRKWOOD.

For six blooms of Mutual Friend, the 1st prize was taken by Mr. A. PACE, gr. to G. W. KILNER, Esq.; 2nd, Mr. SANDFORD.

For a similar number of yellow-coloured blooms, the 1st prize went to Mr. FOSTER; 2nd, Mr. COOK, gr. to G. W. STATHAM, Esq.; each of the five competitors staging Phobos.

With six blooms of any one variety, Mr. BROOKS was 1st with Anstrælie; 2nd, Mr. FROST with Phobos.

Many other classes for Japanese blooms were well filled, and the competition was generally very close. With twelve incurved flowers, Mr. A. JONES was 1st, with a very good stand; 2nd, Mr. TILBURY, gr. to E. B. YOUNG, Esq., and the blooms of this section in several other classes were better than is now usually seen.

A strong competition in the Japanese Anemone classes made a good display. In that for twelve distinct, Mr. A. PAGE was 1st, having beautiful flowers of Queen's Protection. Descartes, Mrs. Gardiner, and W. W. ASTOR, among others; 2nd, Mr. BARRETT. The first named exhibitor was also 1st with a nice vase of single varieties.

Several classes were devoted to cases of blooms arranged with any sort of foliage. In the strongest one, Mr. BICKORS was 1st, Mr. FROST 2nd.

Groups effectively arranged were poorly represented, and the best came from Mr. G. NEAL, gr. to H. C. STEPHENS, Esq.; J. P. 2nd, Mr. EDINGTON, gr. to M. CHAPMAN, Esq.

Fruit and vegetables were extensively shown, and for a collection of the former Mr. NEAL was 1st; while for a collection of vegetables in the principal class (Prizes given by Messrs. Sutton & Sons) the 1st prize went to Mr. KIRKWOOD; 2nd Mr. COOK, &c.

CARDIFF AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 5, 6. This society held its annual show, as usual in the Park Hall, Cardiff, and although the weather was very foggy, it did not appear to affect the attendance of visitors. The show was an excellent one in every respect, the groups and blooms of Chrysanthemums were of great merit, and notwithstanding that Mr. Drake of Cardiff's Champion Grower was also well represented, he managed to secure the 1st position in the open classes, being 1st with four Japanese and twenty-four incurved blooms. Apples, Peas, and Grapes were shown in splendid quality, as were also bouquets, wreaths, ornamental plants, &c.

OPEN CLASSES.

In the class for twenty-four Japanese blooms, thirteen only two exhibitors staged, Mr. DIANEK, Cathays, Cardiff, with capital blooms of M. Louis Remy, Lord Salisbury, Calais, &c.; M. P. KINGS, Mrs. Barkley, Mr. C. H. BAYNE, &c., was placed 1st, followed by Mr. J. HOWE, Llandaf.

Mr. HOWE obtained 1st place for twelve Japanese blooms, distinct, showing Princes of Madford, Vesta, &c.; 2nd, M. G. GUNNING, Mrs. G. W. PALMER, &c.; Mr. P. H. DUNN, &c., was a good 2nd.

Mr. DIANEK led for twenty-four incurved, with blooms of good quality, showing as his best, Lady Isabel, C. H. Curtis, Ma Perfection, Harvest glory, Miss Violet Foster, &c.; 2nd, Mr. HAWKINS, gr. to Mr. PHILIP THERIAULT, Henderford.

Group of *Chrysanthemum a. Plants*. These were arranged on 50 square feet of space, and were interspersed with ornamental foliage plants. 1st, Mr. W. THESDEK, Cardiff, who arranged an excellent group of plants possessed of large blooms and fine foliage, highly mixed with Palms, Cactuses, &c., and edged with Maidenhair Fern, 2nd, Mr. ALDRIDGE, gr. to Mrs. J. SOLE, who had an exhibit of almost equal merit; 2nd, Mr. ELIS, Cardiff.

For Irish Chrysanthemum plants in four varieties, Mr. W. THESDEK was 1st.

Plant arrangements. The best hand bouquet of Chrysanthemums was from Mr. THESDEK, 2nd, Mr. ELIS. Mr. W. THESDEK had a beautifully arranged hand bouquet of double-flowered, Panzerkraut, Transvaal, and Aquatic varieties, U.S.A. Co., Swansea, &c. Mr. THESDEK had 1st prize also for a wreath and lady's spray made of Chrysanthemum blooms.

AMATEURS AND GENTLEMEN'S GARDENERS' CLASSES.

The best group of Chrysanthemums upon a space of 50 square feet was shown by Mr. W. HENDERBALE, Cardiff, and Mr. BROWN, gr. to J. HOWELL, Esq., Cardiff, &c.

Groups of miscellaneous plants on a square feet each were bright and pretty. Mr. J. PROSSER, gr. to J. H. MILES, Esq., Preswylfa, Cardiff, was 1st, and Mr. GRAHAM, gr. to A. STEPHENS, Esq., Penarth, 2nd.

In a class for twenty-four Japanese blooms, there were seven competitors, and some of the best found in the show were staged, the N.C.S. Silver Medal being awarded with the 1st prize, created much interest. This was deservedly secured by Mr. GRAHAM with grand blooms of Mrs. J. LEWIS (which was awarded the N.C.S. Certificate of Merit as the best bloom in the show), F. Molyneux, Matthew Smith, Mue Louise Remy, Calais, &c.; 2nd, Mr. HAWKINS, with Lady Byron, Emily Towers, Princes of Madford, &c. A pretty,

fresh-coloured sport from Miss Nellie Pockett was staged in this stand; 3rd, Mr. E. PAKSONS.

For twelve Japanese blooms Mrs. FRANK HILL was 1st, and Mr. GRAHAM 2nd.

In Mr. PAKSONS' 1st prize exhibit of twelve incurved there were good blooms of Miss Violet Foster, Mue, Ferlat, Miss B. Foster, &c.; Mr. LOCKYER, gr. J. C. Hanbury, Pontypool Park, was 2nd.

FRUIT

Showing good dishes of Muscat of Alexandria Grape, Coes Golden Drop Plum, Blenheim Orange Melon, Benne Superfin Pear, and American Mother Apple, Mr. SPENCER, gr. to H. C. MOFFAT, Esq., Goodwin Court, Ross, was an easy 1st for five dishes of dessert fruit. Mr. PIER, Aberystwyth, being 2nd.

For six dishes of dessert Apples, Mr. BASHAM, Fair Oak Nursery, Newport, Mer., was 1st, and for six dishes of culinary Apples also.

For the six dishes of Peas were from Mr. SPENCER, Lord Lisiansky Court, Mr. Thomas Gombey, was awarded a silver Medal for a collection of truly dishes of large, highly coloured Apples.

TREE EXHIBITS.

Mr. BASHAM furnished a large table with splendid Apples, and was deservedly awarded a Gold Medal, Messrs. GERMAN & SONS, Oldfield Nurseries, Alltweil, being awarded a Silver Medal for a capital collection of about 50 varieties of Apples, and Messrs. JAYMAN & CO., Ltd., of Sully, were awarded a Certificate of Merit for a fine collection of good Apples.

Mr. W. THESDEK staged a capital collection of Cactuses, &c.

KINGSTON AND SURBITON CHRYSANTHEMUM.

NOVEMBER 10. This society staged its twenty-fifth annual show at the Crystal Palace, Kingston Hill, on these dates. The weather was here as elsewhere very dry, but it did not keep out our competitors, and a large number of people did so. The day was a very successful one for the plant classes, the number of exhibitors being a very strong feature. These had capital blooms of the open specimen plants, and for the incurved class, we saw at the entrance of the Crystal Palace a most remarkable and complete display of incurved plants, showing Mr. H. SMITH of Kingston Hill, the 1st prize, arranged, and in an artistic and attractive manner, and artistically grouped, under a capital hand-grown fruit, shown by Mr. J. L. AUSTIN, of Kingston. Mr. W. H. TAYLOR, of Hampton, had a collection of capital Apples. Mr. W. HAYWARD, the secretary, showed elegant chrysanthemums, and other floral designs, and Mr. W. WELLS, of London, had some of the best Japanese and English chrysanthemums.

GROUPS OF PLANTS.

The best of the Chrysanthemum group, and an excellent one was staged by Mr. J. PAVAN, gr. to J. LAVIS, SMITH, Esq., Thames Ditton, Mr. ATKINS, gr. to G. W. MONROE, Esq., Kingston Hill, &c.; 2nd, Mr. CASTLE, gr. to J. W. HAWKES, Esq., Epsom, &c., being 2nd.

The miscellaneous group, generally found along through the show, was of the best. Begonia Gloire de Hollande, Mr. TAYLOR, gr. to A. GILBERT, Esq., East Molesey, was 1st, with a group of about twelve groups. Mr. REDD, gr. to G. A. ROBINSON, Esq., Esher, being 2nd, and Mr. BUCKELL, gr. to M. C. COOK, Esq., Kingston Hill, &c., 3rd.

For the classes for six and twelve incurved specimen Chrysanthemum plants, Mr. J. PEAR, gr. to R. S. BOND, Esq., Surbiton, was well 1st; Mr. WATSON, gr. to Mrs. B. KINGS, Haverhill, being 2nd, &c., and Mr. BROWN, gr. to H. COMPTON, Esq., Kingston Hill, &c., with four plants.

The latter exhibitor was a good 1st with six flowering Begonia Gloire de Hollande, Mr. W. WOODWARD, gr. to Mr. MACKAY, of Kingston Hill, being 2nd. Very highly flowered double Panzerales variety were a good 1st in the group of twelve incurved plants, gr. to F. SMITH, Esq., Leatherhead. Mr. WATSON had the best six specimens. The best six table plants came from Mr. Stevenson, gr. to F. S. HOLLAND, Esq., Aldstone.

CUT FLOWERS.

The open class for twenty-four incurved blooms brought Mr. G. J. HUNT, gr. to FANNIA RALEY, Esq., Woking, &c., well to the front with a capital lot of blooms. Mr. SKEAD coming 2nd.

With twelve blooms, Mr. FORBES, gr. to Madame NEHOLL, Regent House, Surbiton, was well 1st, having very fine blooms of Topaze Orientale, Ma Perfection, Globe d'Or, Lady Isabel, C. H. Curtis, and Madame Darnier, with others. Mr. H. BUCKMASTER, gr. to F. W. SMITH, Esq., Gardens Park, Weybridge, was 2nd.

Mr. FISHER, gr. to F. BAYNE, Esq., Teddington, had the best six blooms, including Duchess of Erie, Ma Perfection, Mrs. W. Egan, C. H. Curtis, Chrysanthemum Brant, and Miss Foster. Mr. MURHAM was 2nd. With six of one variety, Mr. HAWKES, gr. to G. B. TATE, Esq., Thames Ditton House, was a good 1st with noble blooms of Duchess of Erie.

The finest twenty-four Japanese came from Mr. STEVENSON, and capital blooms, as a group, they included W. K. Church, Louis Henry, Lord Salisbury, Mrs. White Popham, E. Molyneux, M. Cheron de Leche, Edith Tabour, Australia, Miss A. Byron, Mrs. Mease, &c.; Mr. HUNT came a very close 2nd, and Mr. PEAR 3rd.

Mr. G. M. PEAR had the best twelve Japanese, having superb blooms of Nellie Pockett, Madame Carnot, Le Grand Dragon, Mrs. Middleton, a superb incurved crown, Miss A. Byron, Harry Greenfield, a rich crimson, and others. Mr. BUCKMASTER was 2nd.

Mr. J. DOWMAN had the best six blooms, and Mr. STEVENSON, with fine Australia, the best six of one variety.

Of others in similar classes, but shown in vases, Mr. PEAR had the best twelve, in Mlle. Therese Roy, the best six yellows, with fine Vicar of Leatherhead, and Mr. TAYLOR the best six of other colours in M. Cheron de Leche.

Re-bred of the old style were still shown, Mr. FOSTER having the best twelve, also the best (and very nice) twelve Anemones, and the best twelve bunches of Pompons in Trebles. He also had in Mrs. Taylor, Rose Bonnet, Victoria, Earl's good glory, Prince's Crown Jewel, most beautiful and large-sized. Mr. S. PEAR came 2nd.

Flowers well shown and in good quantity, the successful exhibitors including Mr. W. Taylor, gr. to C. BAYNE, Esq., Forest Hill, Mr. T. Smith, gr. to Mrs. BOYLE, Waddon, Mr. FORBES, and Mr. BUCKMASTER.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 5, 6. The recent exhibition in the skating rink was one of the best shows ever held at Southampton. Grapes, Apples, and Peas were excellent, Chrysanthemum plants and blooms were numerous, and the quality high.

CUT FLOWERS.

The principal class was that for twelve varieties, three blooms of each, arranged in vases. Mr. G. Hall, gr. to G. S. LAIDLAW, Melchet Court, Bournemouth, secured the leading Award, with massive examples of Mrs. Weekes, W. T. Smith, Arthur Peck, Edward Barton, Mr. J. Banks, Mrs. Barkley, Edwin Molyneux, &c.; Mr. A. H. MOORE, Belmont Nurseries, Southampton, was 2nd.

Mr. E. DAVES, gr. to Mrs. CHAMBERLAIN, Harewood, won the premier place for two dozen Japanese blooms, and Mr. HALL was 2nd.

Mr. E. HOLLIS, gr. to Major CHURCHILL, Embley Park, Bournemouth, with superior examples of Lord Lindau, E. Molyneux, Mutual Friend, and M. Louis Remy, won the 1st prize for twelve Japanese blooms distinct.

An interesting class was that for one dozen Japanese varieties. Mr. HALL won 1st prize with such varieties as Oceana, Mrs. Weekes, and Lady Alice Byron. Blooms in eight specified colours made an interesting display. Three of a colour were shown in vases.

Incurved varieties were much better than in many of the other classes, the classes were well filled with capital examples. For twelve blooms, distinct, Mr. R. WOODHOPE, gr. to Col. Boyd, Crofton House, Titchfield, was an easy 1st with 12 good examples.

Mr. E. BROWN, jun., New Alma Road, Southampton, was unapproachably in the amateur division, winning with twelve and six Japanese blooms, distinct, and staging excellent blooms.

The premier incurved was C. H. Curtis, belonging to Mr. H. HOBSON, Mr. HALL securing a like bloom in the Japanese section for a magnificent bloom of Mrs. Weekes.

PLANTS.

Groups of Chrysanthemums in pots added much to the beauty of the show. Mr. HOSKY easily won the premier award with grand examples of dwarf growth, Le Grand Dragon, Modestine, Swanley Court, Phoenix, and M. Cheron de Leche, were conspicuous for their good quality. Mr. HOSKY also won for four specimen plants.

Mr. H. WELLS, Shirley Nurseries, Southampton, won 1st prize for a group of miscellaneous plants arranged for effect.

CHEL TENHAM.

NOVEMBER 6. The thirty-first annual two days show of the Cheltenham Root, Grass, Fruit and Chrysanthemum Society was opened at the Winter Gardens, Cheltenham, on this day, and as usual the most attractive features for the general public were neither the giant roots nor the fine grass, but the Chrysanthemum. The exhibits in the flower and fruit class, numbered 275, somewhat better than those of last year, but the quality was well maintained, and the competition between the Chrysanthemum enthusiasts was keen as ever. The Cheltenham Corporation's 750-guinea Cup for six varieties of incurved was won by Mr. P. HOSKY, Private Nursery, though it is last year's holder, Mr. H. G. BENNETT, an lam close, Sir H. E. Beech's five-guinea Cup for the best group was held a year ago outright by Col. ROGERS, who had gained it the previous three in succession. This year Sir M.

Plants which presented a new Challenge Cup in the one class under the same conditions, and it was won after a keen competition by Mr. J. HORNBERK, Cowley Manor, Dr. TEBALDSON being a close 2nd.

A new feature in the show was two circular groups of Chrysanthemums in response to the offer of a five-guinea Cup by G. BOWERS, to be won three years in succession, and this will be held for the year by Messrs. BAILES & SHARPE, Mr. J. HORNBERK, gr. W. Maddocks being placed 2nd. The groups were extremely beautiful, and the judges had considerable difficulty in deciding between several merits. It is usually said that the cut blooms, which had been brought in, was the greatest display of lowliness in form and colour.

Col. ROBERTS, gr. Mr. Lanby, was again to the front in the cut bloom classes, some of the specimens shown in the cut were fantastic as well as beautiful, and the veteran exhibitor named showed amongst his thirty-six varieties (Japanese) a new one called *Ch. Hoffman*, a yellow sport from Nellie Peckett, which is usually white. Mr. G. ADAMS, Postlip (gr. Mr. E. E. Young), was 2nd. The Baron de Fernexes' special prize for the best Chrysanthemum plant was won by Mr. H. G. BENNETT, gr. Mr. J. Bates; and Mr. J. HORNBERK, who secured the Mayor's prize—a cup value 45s.—for the second time, was also awarded a Certificate for the best cut bloom, a Mrs. Menze. Mr. J. L. BURGESS, gr. Mr. W. Humphries succeeded in taking the 1st prize for twelve cut blooms, incurred also a 1st for six incurred, and 2nd for eighteen blooms, incurred and Japanese. The same gentleman also received the premier award for six cut Japanese blooms. Mr. S. B. SUTHERLAND placed 2nd. Mr. G. F. MOORE, Bourton, de la Vater gr., Mr. F. W. H. LANDAU, was placed 1st to a collection of eighteen Japanese cut blooms, and Mr. S. B. SUTHERLAND was 2nd.

DEVON & EXETER GARDENERS'.

NOVEMBER 6.—In the Guildhall, Exeter, on the above date, at the opening meeting of the session, a lecture on "Fruit-growing in Guernsey" was given by Mr. F. J. FLECKER. The lecturer, possessing as he does, an intimate knowledge of the fruit industry in that Island, gave most interesting information respecting the methods adopted in cultivation, and the treatment of different kinds of fruit exported from the Island, which is prodigious. Our Exeter correspondent has furnished us with a rather full account of the lecture, but we regret, owing to the crowded conditions of our columns at the present time, we cannot print this in full.

NORTHAMPTON CHRYSANTHEMUM.

NOVEMBER 6, 7.—The thirtieth exhibition of this Society was held in the Corn Exchange, and the quality of the exhibits was far superior to that on former occasions. The entries were more numerous, and the competitions much keener than it has been the case for some years. Exhibits from amateurs were particularly good, and special mention must be made of the splendid group staged by Mr. W. KIRBY, 25, Milton Street, Knapley Park, Northampton, who has now won outright the Silver Cup given by the Vice-President of the Society.

PLANTS AND GROUPS.

There was only one group of Chrysanthemums in the class open to subscribers within a radius of fifty miles, and the 1st prize £10s. and a Silver Cup value 15s., given by the President of the Society, was awarded to F. G. NORRELL, Esq., Northampton (gr. Queen Sophia).

Mr. SODEN was also placed 1st for six Japanese plants, distinct varieties, and for four varieties. Mr. SODEN'S 1st prize exhibit of two Japanese incandescents the varieties R. Hooper Pearson and Miss Nellie Peckett.

For four incurred varieties of Chrysanthemums, a specimen bouquet, and for twelve single-flowered Primulas, Mr. SODEN was most successful in every case.

The best collection of six Primulas was one from Mr. A. SMITH, gr. to Mr. W. H. TURNER, Beaumont Villa, Cliftonville, Northampton.

A collection of six table plants was shown best by EARL SPENCER, Aldbrough Park, Northampton (gr. Mr. Sibs' table).

The groups of plants staged by amateurs were exceptionally good, and the chief winners were Mr. KIRBY, Mr. J. BAKERWAY, Mr. SEATON, and Mr. BREWSTER.

CUT BLOOMS.

For six vases of specimen blooms, Japanese, three blooms of each variety, Sir HENRY WAKE, Bart., Cornpton Hall, Northampton (gr. Mr. Knightley), was placed 1st. Mr. DUNSKLEY and Mr. COLE were 2nd and 3rd respectively.

In the class for three vases of single-flowered varieties, distinct six sprays to a vase, Mr. G. W. THURPS, Northampton (gr. Mr. Reeves), won 1st prize, having some nice sprays of *Edith Pegram*, Miss Mary Anderson, and *Florida*. Mr. SODEN being 2nd.

For eighteen Japanese varieties, distinct, Mr. COLE

was 1st, with clean heavy blooms of Mr. W. Topham, Mr. T. Carrington, Mrs. W. Mease, Mr. H. Weekes, Levensham, Mrs. Barkley, in the back row, *Australie*, *Madame Louise Remy*, Mrs. Barratt, *Securitate Erenis*, Mrs. Phillips, and *Lord Salisbury*, in the middle row; and *Graphis*, *Lord Ladbroke*, Mr. Palmer, *Calva's "99"*, and *R. J. Upson* in the front row. The Marquis of Northampton (gr. Mr. J. Hayes) was 2nd. Mr. COLE won 1st prize also for twelve varieties and six varieties. The best Japanese variety shown in collections of six blooms each was *Le Grand Inca*, from Mr. COLE'S.

In the class for twelve incurred varieties, Mr. COLE took leading honours.

Mr. DUNSKLEY was placed 1st for six incurred blooms of one variety, staging C. H. Curtis.

In the amateur classes the principal winners were Messrs. KIRBY, HENNINGSON, SIMONS, CUMBERBATCH, SEEBERT, and PEABODY.

FRUITS AND VEGETABLES.

For a collection of vegetables of eight varieties, Mr. COLE was 1st, having good specimens of Onions and Celery in his collection. Mr. KNIGHTLEY and Mr. WILSON being 2nd and 3rd.

Mr. WILSON had the best Celery, with a large heavy, heavy specimen. And Mr. COLE was 1st for two dishes of Kidney Potatoes, the varieties being Sutton's Supreme and Snowdrop; and for two dishes of round Potatoes, staging Windsor Castle and Lyon House Potato.

For six dishes of culinary Apples, Mr. F. S. BEEFON, Ramsey, Hunts, was in front.

The Rev. J. WATKINS, Great Houghton, Northants, was placed 1st for six dishes of dessert Apples, having Cox's Orange Pippin, Worcester Pearmain, Ribston Pippin, &c.

Mr. COLE had the best three dishes of Pears, with *Beurre Diel*, *Pimaaston Duchess*, and *Considère de la Cour*; also the best bunches of black Grapes, and *Mr. A. Child*, gr. to W. H. A. APTHEIMBORO, Esq., Cateley House, Daventry, the two best white Grapes. *H. K.*

ASCOT CHRYSANTHEMUM.

NOVEMBER 6, 7.—The neighbourhood of Ascot has long been noted for the plants grown in a dwarf manner for grouping purposes, and this year a fine display was made of these. Mr. Lane, gr. to Sir E. DENNING, LAWRENCE, Bart., King's Ride, Ascot, easily won the premier place with plants of dwarf stature, with ample green leaves, and magnificent blooms. Mr. H. WHITE, gr. to the Dowager Marchioness CONYNGHAM, The Mount, was 2nd. Exhibits of undisbanded plants encouraged to illustrate their decorative beauty.

There were classes arranged for four competitive groups. That which secured 1st prize for Mr. T. Grant, gr. to Sir JOHN LYNAS, Bart., Heatherbank, was composed mainly of Pomones, single flowered, and small Japanese varieties, and the grouping was well done. Mr. HAWTHORNE also sent an attractive collection, and took 2nd prize.

Chrysanthemums grown as "bush" specimens were freely flowered, which is the salient point about this type. Mr. NEATE, gr. to Miss THORNER, Queen's Hill, easily secured 1st place in the prize 1st. *Elsie* and *Miss W. Holroyd* were conspicuous in this group.

Cut blooms were not numerous, but possessed much quality. Mr. A. L. FAYOUD, gr. to H. P. LASCHALLAS, Esq., Highams, was 1st for thirty-six distinct, half being incurred, and the remainder Japanese; Mr. LANE was 2nd. Mr. W. Wilson, gr. to Mrs. CHRISTIE, Radden, was the most successful exhibitor for twelve Japanese, distinct.

For three blossoms of six varieties arranged in twos, there was much competition. Mr. W. PERRY, gr. to LOUIS FLORESHAM, Esq., Perry Hill Park, with typical examples of Australian Gold, G. J. Warren, Edwin Molyneux, and Madame Carmel, gained the premier award.

In the class for six blooms of any white flowered variety, Mr. PERRY won with nice examples of *Madame Carmel*. Mr. PERRY staged Mrs. Mease in admirable condition for any coloured variety.

Mr. WILSON had the best incurred blooms in twelve varieties, C. H. Curtis, Ernest Cannell, and Duchess of Fife, standing out conspicuously, even in a good stand. Chrysanthemums arranged in a basket made quite a pleasing feature.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 6, 7.—This Society held its annual show in the Shire Hall, Hereford, when Apples and Pears were shown in perfect condition in sixty classes.

OPEN CLASSES.

In the class for fifty dishes of Apples, distinct, there were three collections. Mr. WATKINS, Pomona Farm, Withington, was placed 1st with very highly-coloured, clean fruits, including splendid dishes of *American Mother*, *Warner's King*, *The Queen*, *Branley's Seedling*, *Tillington Seedling*, *Woolley's Newton Wonder*, and *Wolf River*, very like *Cox's Pomona*. The KING'S

ACRE FRUIT CO., who were a close 2nd, had good dishes of *King's Acre*, and *Bow Hill Pippin*, the last-named is new. Messrs. LEWTHES BROS., Tillington, Hereford, 3rd.

The class for thirty dishes was very full, Mr. R. M. WILKIN, Crendonhill, Hereford, leading, with excellent fruits; amongst his best were *Golden Noble*, *Leves's Prince Albert*, *Peasgood's Nonchalant*, and *Newton Wonder*; 2nd, Mr. J. PEWTERES, Bishopcote, Hereford; 3rd, Messrs. CAMPBELL & SETTING, Glaston Court, Ross.

The class for twenty-four dishes of Pears was won by Mr. SPENCER, gr. to H. C. MOFFATT, Esq., Gloucech Court, Ross, with fine dishes of *Crassane*, *Considère de la Cour*, *Beurre Diel*, *B. Ballet*, *perc*, *Doynette du Comice*, *Darouzet*, *Beurre d'Avallon*, &c.; 2nd, Mr. Humphries, gr. to the Earl of CHESTERFIELD, Holm Lodge.

Mr. KICK, gr. to — HADFIELD, Esq., Morrilton, Ross, was 1st for twelve dishes of Pears; and Mr. GRINDROD, gr. to G. T. BAILEY, Esq., Whitfield, Hereford, 2nd.

AMATEURS' CLASSES.

Apples in twenty-four dishes, twelve culinary and twelve dessert, were of high quality from Mrs. EASTLICK, by the Schloss, Hereford; 2nd, Mr. DAVIES, gr. to W. E. KING-KING, Esq., Badenham; followed by Mr. WOOTEN, Byford, Hereford.

Mr. GRINDROD won the 1st prize for twelve dishes of Apples, his best being *Lane's Prince Albert*, *Gascogne's*, *Tyle's Kernel*, &c.; 2nd, Mrs. WOODHOUSE, Burghill Court, Hereford.

For eight dishes of dessert varieties, there was great competition, Mr. SPENCER was 1st; Mr. GRINDROD, 2nd. Twelve culinary dishes of Pears were shown from Mrs. WOODHOUSE; and Mr. HAZELTINE was 2nd.

For a collection of fruit in six dishes, Mr. DAWES, gr. to M. BIDDULPH, Esq., Ledbury Park, was 1st, with excellent *Gras Maroc* and good *Muscad* of *Alexandria* Grapes, *President* *Pinus* in good condition, *Pimaaston Melon*. Mr. DAWES also took the premier place in the classes for three bunches of *Gras Colmar* Grapes, three bunches of any white Grape with *Muscad* of *Alexandria* in good condition, any black Grapes with perfectly finished *Gras Maroc*, and for the most perfect bunch in the show with a fine bunch of *Gras Maroc*.

Culinary Classes.—For the best dish of Pears in the Show, 1st, Mr. HUMPHRIES, with large, well coloured fruits of *Doynette du Comice*. For best dish of dessert Apples, 1st, Mr. T. PEWTERES, with splendid fruits of *Cox's Orange Pippin*. For best dish of culinary Apples, 1st, Messrs. CAMPBELL & SETTING, with highly finished, large fruits of *Branley's Seedling*.

VEGETABLES.

The 1st prize offered by Mr. Wilson, Commercial Street, Hereford, for a collection of vegetables, twelve dishes, was won by Mr. GRINDROD; 2nd, Mr. FOGGAT, gr. to J. WALKER, Esq., Belmont. There were eight excellent collections staged.

Mr. WILSON exhibited a grand non-competitive collection of very large Onions, also floral wreaths and crosses.

CHRYSANTHEMUMS.

Mr. C. WHITTON won 1st prize for a group of Chrysanthemums. Mr. LOVELOCK, gr. to A. W. FORSTER, Esq., Brockhampton Court, was placed 1st in the classes for twenty-four blooms of Japanese Chrysanthemums, and for twelve blooms of incurred varieties. Mr. SEATON, gr. to the Rev. H. BIRCHLEY, was 1st for twelve Japanese blooms; and Mr. RICK took the leading place for twelve vases of Japanese varieties.

The best vase of Chrysanthemums, arranged with any kind of foliage, for which Mr. Wilson offered special prizes, was shown by Mr. LOVELOCK.

MARGATE CHRYSANTHEMUM.

NOVEMBER 6, 7.—This Society held its fifth annual exhibition on the above dates, at the Hall-by-the-Sea. The groups of Chrysanthemums arranged with foliage plants for effect, brought together some well-grown specimens, and the competition was keen. The 1st prize, a silver Cup value fifty guineas, was won by Mr. CORNFORD, gr. to the donor, P. H. G. POWELL COTTON, Esq., Quex Park, Birehington. This group of plants bore some splendid blooms; Mr. CHAPMAN, florist, Kainsgate, was 2nd.

For a group of miscellaneous plants Mr. CORNFORD again took the lead; followed by Mr. KNOWLES, gr. to Sir J. SERIB, MONTFLEURY, East Cliff Lodge, Kainsgate.

In the class for twenty-four incurred blooms of Chrysanthemums, Mr. CORNFORD was 1st; and the same exhibitor was 1st in the classes for twenty-four Japanese blooms and twelve incurred blooms.

The collection of twelve Japanese blooms came from Mr. DOWNER, gr. to G. ANTON, Esq., Mountfield.

The smaller classes for cut blooms were well filled, and pot plants showed a marked improvement over those of previous years.

In Division B, open to amateurs, there was a very spirited competition. The leading prize-winners being Messrs. A. ROSS of Westgate, DOWNER, and DOTCHY.

There was a fine show of Peas and Apples, some superb dishes and baskets of Apples and Peas not for competition being staged by Mr. MOTT, Nurseryman, Canterbury; and a very creditable lot by Mr. FAY, Ash, near Dover.

Amongst the prize-winners in the class set apart for Fruit were Mr. COLEMAN, Mr. Burgess, gr. to J. T. FLEMING, gr. to Northdown; Mr. Tegg, gr. to G. J. WAKE, North Foreland, and Mr. Borley, gr. to Capt. HATHFIELD, Hartsdown.

In spite of the dry season experienced in the Isle of Thanet, vegetables were exceptionally fine.

Bonquets, sprays, and other floral arrangements were numerous: Mr. J. BING, South Bank Nursery; Miss BROCKMAN, Adlington Lodge, and Mrs. J. BOVENS being the principal prize-winners.

The committee and its secretary, Mr. Levett, is to be congratulated upon the success of the society, which has become one of the best in the county.

LINNEAN.

NOVEMBER 7.—MR W. BOTTING, HEMSTEY had several interesting exhibits. Specimens were shown of a West Australian Umbelliferous shrub, *Siebera deltoidea*, remarkable in having strings of underground tubers of a dirty yellow, resembling a misshapen Lemon. These tubers are eaten by the aborigines both raw and roasted, and they are not dissipated by some colonists. They were sent to Kew by Mr. A. Morrison, of the Agricultural Department, Perth, but they were obtained from the Fitzgerald River, in the south-east of the colony. The curious point is, that a shrub should produce tubers as large as those of the much more prolific woody stocks, from which annual stems spring.

A selection of a dozen South African species of *Helichrysum* illustrated the marvellous diversity of this genus. In its centre of greatest concentration, where some 200 species are congregated. There were specimens of a variety, an *Egypodium*, a *Cyperus*, a *Hebe*, a *Malva*, and various other types in habit and foliage, with flower-heads as large as the leaves, and the different from the common *Helichrysum Heliotropium* in a bract which one could imagine, yet the floral structure is very uniform.

Archidendron solomonense, Benth., a new tree of the Leguminosae, discovered by Archibald Cunningham of the Solomon Islands, to the south-east of New Guinea, is one of the most beautiful of the order, and produces several pods from each flower.

The germination of the seeds of *Amansia Bobiana* was explained from specimens sent to Kew by Mr. Dalman, Curator of the Botanic Garden, Grahamstown, South Africa. There are two stages in the germination of this seed. In the first stage the radicle emerges from the seed shell, finally bringing out the axis of the plant, and the stalks of the cotyledons. The blade of which, at first, is small, widely does not lengthen open. The radicle grows into a small, hard, carrot-shaped body, from which the stalks of the cotyledons part when they have done their work of conveying nutriment in the seed to the growing plant. At the top of this carrot-shaped root is the rudiment of the plumule, which eventually develops into a stem of thick, fleshy growth; does not commence here until some weeks after emergence from the cotyledons, and may be prolonged by drought under natural conditions, or by withholding moisture under artificial conditions. This kind of germination may be better known to gardeners than to botanists.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM.

NOVEMBER 12, 13, 14. The annual show of the Society was opened on Tuesday last in the City Hall, Birmingham. There was every fine display in this capacious hall, and honorary exhibits were of a more numerous and of greater interest than ever before. In the cut bloom section, there was observed a little falling off here and there, compared with the very best it shows Birmingham has held, but on the whole the committee has every cause to be gratified.

The great groups of Chrysanthemums, for which such substantial prizes are given, always took first in point of attractiveness. Mr. J. WELFORD, of Moreley, again won 1st prize with probably the most showy group ever put up in the building. Conspecific in it were some very handsome flowers by Mrs. J. A. Lady Hamilton, and Vivand Morel. In Mr. J. A. KENNEDY'S 2nd prize group there was a little weakness in the front, in comparison with which the back was very closely packed with flowers. The 3rd group Mr. H. K. PAVOYER'S, was not nearly so impressive, the blooms being smaller in character all through.

The competition in the smaller groups, was even more keen, but Mr. W. SMITH, of Moreley, was 1st with a fine exhibit, Mr. G. CAHILL was an excellent 2nd, the varieties in both group being of the usual standard types.

The lateness of the show perhaps provides the explanation for Mr. E. MALLISEY'S 1st prize group of nine large-flowering Chrysanthemums being a little

past their best, yet they were magnificent plants. Madame Perlat, a pretty Bush white, being a superb specimen. Mr. G. CAHILL'S exhibit, which took 2nd prize, was not nearly so far forward—hardly in full bloom, in fact.

The class for six Japanese supplied some glorious plants. Con-specific in Mr. E. MALLISEY'S 1st prize group were very handsome specimens of Charles Davis, and his beautiful companion, Vivand Morel. Mr. J. A. KENNEDY ran the premier exhibitor exceedingly close with a magnificent group, in which that pretty salmon sport from Vivand Morel, Lady Hamilton, attracted chief notice.

Mr. E. MALLISEY is again the owner of the 1st prize in this class for one large-flowering Japanese variety, Double, and he also took premier honours in the single Japanese class, showing a grand specimen of Mrs. J. Ratson, absolutely covered with a pure white blossoms.

The class for three single Chrysanthemums, dissimilar varieties, attracted only one exhibitor, Mr. G. CAHILL, who was given the first award for three very fine plants.

The classes for cut blooms, the Japanese varieties, were, of course, most strongly represented, but the quality of the improved blooms, testify to the great amount of trouble which had been expended on them. The twenty-four improved blooms, for which the Dowager Lady HINCHIN received 1st prize, included some extremely very beautiful specimens, amongst which were Mrs. E. Tarrant, Mrs. H. J. Jones.

Only one variety was taken as a specimen in the improved blooms, but in the original Japanese class Mr. HENDERSON'S cut that was quite up to the standard of the larger class. To exhibit in the show is a fine thing to encourage the cultivation of blooms of various kinds this year, not with a view to a response, the fact that specimens shown being assigned the best of the kind.

A very strong class, too, was that for Japanese blooms arranged with small ferns and Pallas in pots. Mr. PROCTOR'S prize was deserved to great advantage, while the 1st prize was also deservedly awarded to a collection with to give a fine handsome display of Pinnulas which supplied for the foregoing section, to what might be expected to be a high one.

A number of well-kept and fully bloomed plants were shown for Messrs. HENDERSON, the 1st prize in overall class being given to a group of 10 flowers. By this white Mr. J. A. KENNEDY won 2nd, with some specimens. Mr. R. C. CAHILL was the only exhibitor.

The exhibits of 100 specimens fully up to the average. Mr. F. NEEDY with some of the most finely finished buds, indicated one of the best flower growers in the country. In regard to the vegetable section, it may be stated that it proved more of a long and more than usual, and that the various vegetables shown were fully deserving of the space devoted to them. A fine collection from Lord ALDENHAM, 2d, Mr. E. COLEMAN, was thought to be decidedly the best of the vegetables ever shown at Birmingham.

We append the names of the winners in a few of the principal classes, as given in the "order of merit."

For twenty-four blooms, improved, 1st, Dowager Lady HINCHIN, 2nd, Lady HENDERSON, 3rd, Lord ALDENHAM.

For twenty-four blooms, single, 1st, Dowager Lady HINCHIN; 2nd, J. A. JAMES.

Eighteen blooms, improved, 1st, J. A. JAMES.

Eighteen blooms, Japanese, 1st, J. HENDERSON; 2nd, Mr. J. E. WINGFIELD; 3rd, J. A. JAMES.

Twenty-five blooms, improved, 1st, J. A. JAMES; 2nd, Mr. ALDENHAM; 3rd, Lord ALDENHAM.

Twenty-four blooms, two varieties, 1st, Dowager Lady HINCHIN; 2nd, Mr. E. MALLISEY.

Twelve Chinese, 1st, J. A. JAMES; 2nd, Mr. THOMSON & Co. Spokhill; 3rd, J. A. KENNEDY.

Six Fern-leaved Pinnulas, 1st, J. A. KENNEDY; 2nd, E. MALLISEY.

Collection of 100 specimens in fruit, 1st, E. J. CORRIE, 2nd, Earl of ALDENHAM, 3rd, Lord ALDENHAM, 4th, Lord ALDENHAM, 5th, Mrs. J. A. JAMES, 6th, Mrs. J. A. JAMES, 7th, Mrs. J. A. JAMES, 8th, Mrs. J. A. JAMES, 9th, Mrs. J. A. JAMES, 10th, Mrs. J. A. JAMES, 11th, Mrs. J. A. JAMES, 12th, Mrs. J. A. JAMES, 13th, Mrs. J. A. JAMES, 14th, Mrs. J. A. JAMES, 15th, Mrs. J. A. JAMES, 16th, Mrs. J. A. JAMES, 17th, Mrs. J. A. JAMES, 18th, Mrs. J. A. JAMES, 19th, Mrs. J. A. JAMES, 20th, Mrs. J. A. JAMES, 21st, Mrs. J. A. JAMES, 22nd, Mrs. J. A. JAMES, 23rd, Mrs. J. A. JAMES, 24th, Mrs. J. A. JAMES, 25th, Mrs. J. A. JAMES, 26th, Mrs. J. A. JAMES, 27th, Mrs. J. A. JAMES, 28th, Mrs. J. A. JAMES, 29th, Mrs. J. A. JAMES, 30th, Mrs. J. A. JAMES, 31st, Mrs. J. A. JAMES, 32nd, Mrs. J. A. JAMES, 33rd, Mrs. J. A. JAMES, 34th, Mrs. J. A. JAMES, 35th, Mrs. J. A. JAMES, 36th, Mrs. J. A. JAMES, 37th, Mrs. J. A. JAMES, 38th, Mrs. J. A. JAMES, 39th, Mrs. J. A. JAMES, 40th, Mrs. J. A. JAMES, 41st, Mrs. J. A. JAMES, 42nd, Mrs. J. A. JAMES, 43rd, Mrs. J. A. JAMES, 44th, Mrs. J. A. JAMES, 45th, Mrs. J. A. JAMES, 46th, Mrs. J. A. JAMES, 47th, Mrs. J. A. JAMES, 48th, Mrs. J. A. JAMES, 49th, Mrs. J. A. JAMES, 50th, Mrs. J. A. JAMES, 51st, Mrs. J. A. JAMES, 52nd, Mrs. J. A. JAMES, 53rd, Mrs. J. A. JAMES, 54th, Mrs. J. A. JAMES, 55th, Mrs. J. A. JAMES, 56th, Mrs. J. A. JAMES, 57th, Mrs. J. A. JAMES, 58th, Mrs. J. A. JAMES, 59th, Mrs. J. A. JAMES, 60th, Mrs. J. A. JAMES, 61st, Mrs. J. A. JAMES, 62nd, Mrs. J. A. JAMES, 63rd, Mrs. J. A. JAMES, 64th, Mrs. J. A. JAMES, 65th, Mrs. J. A. JAMES, 66th, Mrs. J. A. JAMES, 67th, Mrs. J. A. JAMES, 68th, Mrs. J. A. JAMES, 69th, Mrs. J. A. JAMES, 70th, Mrs. J. A. JAMES, 71st, Mrs. J. A. JAMES, 72nd, Mrs. J. A. JAMES, 73rd, Mrs. J. A. JAMES, 74th, Mrs. J. A. JAMES, 75th, Mrs. J. A. JAMES, 76th, Mrs. J. A. JAMES, 77th, Mrs. J. A. JAMES, 78th, Mrs. J. A. JAMES, 79th, Mrs. J. A. JAMES, 80th, Mrs. J. A. JAMES, 81st, Mrs. J. A. JAMES, 82nd, Mrs. J. A. JAMES, 83rd, Mrs. J. A. JAMES, 84th, Mrs. J. A. JAMES, 85th, Mrs. J. A. JAMES, 86th, Mrs. J. A. JAMES, 87th, Mrs. J. A. JAMES, 88th, Mrs. J. A. JAMES, 89th, Mrs. J. A. JAMES, 90th, Mrs. J. A. JAMES, 91st, Mrs. J. A. JAMES, 92nd, Mrs. J. A. JAMES, 93rd, Mrs. J. A. JAMES, 94th, Mrs. J. A. JAMES, 95th, Mrs. J. A. JAMES, 96th, Mrs. J. A. JAMES, 97th, Mrs. J. A. JAMES, 98th, Mrs. J. A. JAMES, 99th, Mrs. J. A. JAMES, 100th, Mrs. J. A. JAMES.

Collection of Vegetables (Messrs. Webb's prizes), 1st, Lord ALDENHAM, 2nd, Earl of ALDENHAM.

NON-COMPETITIVE ENTRIES.

A superb collection of Orchids was staged by Mr. H. WHALLEY, upon 30 feet space along a wide bench range. Con-specific among these were *Vanda orata*, *Cypripedium hetero-Sanders*, *Oncidium crispum*, and *O. varicosum* (Bogner).

Messrs. WEBB & SONS, of Southampton, had an exhibit upon 10 feet of table space, a variety of Potatoes.

Messrs. THOMSON & CO., of Birmingham, staged a very capacious group of plants, in which a striking centerpiece was formed by a tall column of 80½ splendid cranberries.

Of interest from the point of view of the future of the fruit industry was the stand set up by Mr. J. DAVEN, from the Worcester County Council's experiment garden at Droitwich. Mr. DAVEN contends that English fruits, and especially Plums and Apples, are as well suited for drying as are those grown on the Continent.

Mr. W. J. GODFREY, Exmouth Nurseryman, Devon, exhibited a fine collection of blooms of new varieties of Chrysanthemums.

GOLD MEDALS.

were awarded to Mr. H. Whalley, Kenilworth, Orchid; Messrs. Hewitt & Co. floral display and collection of shrubs; Mr. T. Hughes, floral display; Mr. J. Crook floral display; Messrs. Richard Smith & Co. fruit, flowering plants, and shrubs; Messrs. Thomson & Co. collection of vegetables, flowering and other plants; Messrs. Webb & Sons, miscellaneous plants, Potatoes and Onions; Mr. John Kisham, collection of fruit; Messrs. Yates & Sons, collection of vegetables; Messrs. W & J. Brown, collection of fruit; Mr. W. J. Godfrey, collection of cut Chrysanthemums and Bowles; Messrs. Peatross Brothers, collection of Apples.

SILVER MEDALS.

were awarded as follows: Messrs. Pope & Sons, floral designs and collection of fruit; Worcester-Lake County Council, collection of dried fruits and preserves; The Vineyard, Acob's Green, collection of ornamental grounds and fountains; Mr. H. Hewitt & Co. collection of ornamental and forest Pelargoniums; Messrs. Webb & Co., collection of cut Chrysanthemum flowers; Mr. J. Smith, collection of grounds; Mr. W. B. Child, collection of shrubs and alpine plants; and The Kent's Lee Nursery Company, for a collection of Apples.

SOCIETY REPORTS.— Owing to the great pressure on our space, many Reports are being held over.

ANSWERS TO CORRESPONDENTS.

A. CATHERINE MARIEM ROSE, WOOD HILL GREEN AND IMMALLEE; W. M. Apply no water at all at the root, and reduce the temperature of the greenhouse as much as possible, consistently with the safety of the other plants in the house. Probably the border is very deep, and the drainage imperfect. This might be seen to between the present time and March. No harm will be done should the Rose not shed its leaves, and the growth become dormant; the general lowering of the temperature at this season affording a certain arrest of growth. Beyond thinning out weak flowerless shoots, and shortening the lengthy ones somewhat at different lengths, giving the stronger ones a horizontal or downward direction, nothing more is required in the matter of pruning and training.

A STANDARD CHRYSANTHEMUM; J. E. T. A plant having a globular crown, and a clean stem of from 1 to 3 feet in height, strong enough to carry the crown without needing any support.

BEECH-LEAVES; M. H. B. When thoroughly decayed, that is turned into "leaf-mould," they form a good addition to soils in the pot culture of plants. The period for the total decay of the leaves is from two to three years; but the heap should not be undisturbed for that length of time, but the fine decayed portion should be removed once a year by sifting through a 1/4 inch meshed sieve or screen, and the remainder thrown together again.

BLACK PLANTO; J. P. J. There are several black varieties, such as the Negro, Congo, Jersey Black, &c. In France they are used cut in slices for garnishing purposes.

CHINA ROSE WITH DARK-TINTED FOLIAGE; Dun-donia. What is meant is probably the Noisette Rose, Pellenberg, a strong-growing, very floriferous plant, with bright crimson flowers and bronzy-green foliage—in excellent variety for pegging down almost to the soil, or climbing a low wall or a pillar. The original Noisette was due, as Mr. W.

Paul remarks in *The Rose Garden*, "to the accidental fertilisation of the China Rose with the Musk Rose. It was obtained by M. Noisette in the Old America, and sent to Paris in 1814. "The old style of Noisette is being lost, and the varieties of to-day are mostly those that are hybrids of the Tea-scented Rose; with the result that we are making a hardy race tender, and losing a pretty feature—the large and graceful trusses of bloom."

CHRYSANTHEMUM BUDS: W. Y. *Eding*. Many cultivators have the same difficulty as yourself in preventing varieties of the Madame Carnot group from forming smaller flower-buds around the one that is developing. In order to overcome the tendency as far as possible, select your flowering-bud about the third week in August, and do not feed your plants very much until you have ground to conclude the buds will develop kindly and normally. Above all, do everything possible to assist the plants to ripen their growths as they progress in age, and expose them to all the air and sunshine throughout the summer.

LILIUM AURATUM AND LANCEFOLIUM: J. H. S. We do not know if your *Lancefolium* is correctly named. *L. lancefolium* is erroneously applied to the pale red-flowered *L. elegans* and to *L. speciosum*. *L. elegans* (true) and *L. auratum* are Japanese species, and amenable to similar treatment, and in this country the bulbs should be taken up when the stems have died down, and not left long exposed to the air, but put in loam, peat, decayed manure, and sand, and stood in a cold pit or out-of-doors sunk in a bed of tree-leaves, after putting a slate over each pot so as to exclude mice and rats that are partial to the bulbs. If the potting-soil is moist, no water should be applied before growth has taken place. They can be replanted without disturbance in April or May. If your *L. lancefolium* is really *L. speciosum*, which has white flowers spotted more or less with ruby colour, it need not be taken up at this season, except for safety sake, but may be left in the soil under little mounds of coal-ashes. These Lilies succeed where there is partial shade, but not under the shade of trees, and we think that your bulbs get too little sunshine, hence their unsatisfactory condition. Peat is better for Lilies than so much leaf-mould, although some of the latter may be employed, together with manure.

***NAMES OF FRUITS AND OF PLANTS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Not more than six specimens should be sent. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: D. B. 1, Beurré Rance; 2, Bergamotte Sageret; 3, Urbaniste; 4, Beurré d'Arenberg; 5, Gilon Moreau; 6, rotten.—G. F. M. 1, Grange's Pearmain; 2, Allen's Everlasting; 3, Smart's Prince Arthur; 4, Hanwell Souling; 5, Dredge's Fame; 6, Beurré d'Arenberg.—T. T. 1, Beurré Diel; 2, White Doynone; 3, Vicar of Winkfield.—Yorks. 2, Dumelow's Seedling; 3, Gloria Mundi; 5, Maltster; 6, Beauty of Kent; 1 and 4, not known.—W. G. 1, Léon Leclerc de Lavat; 2, Beurré Superfin; 3, rotten.—A. P. 1, Melrose; 2, Hunt's Deux Ans; 3, Mitchell Crab; 4, Cellini; 5, Hawthornden; 6, Grenadier.—J. B. A. Domino.—W. A. Jolly Beggar.—G. B. C. Box smashed, and the greater part of contents useless, we could only identify the following: 2, Beurré du Cercle; 1, Colmar Nolis; 5, Sarrurier.—Gardener. 3, Marchal Billen; 1, Rousselet de Meester. The others were past recognition.—N. P. R. We regret

that you have not complied with the request. It is an invariable rule.—A. A. K. The Pear is Louise Bonne de Jersey, 1, Murfit's Seedling; 2, Sabine; 3, Round Winter Nonsuch; 4, Dumelow's Seedling; 5, Winter Pomeroy.—D. Both the samples are Beurré Clairgeau, the slight differences may be due to accidental circumstances.—J. F. S. Pear: 1, Fondante de Malines; 2, Gandy. Apple: 1, Dr. Harvey; 2, Domino.—J. S. 1, Tyler's Kernel; 2, Broad-eyed Pippin; 3, Winter Greening; 4, Keddlstone Pippin.—J. H. B. 1, Flower of Kent; 2, Ribston Pearmain; 3, Golden Spire; 1, Mère de Ménage; 5, Dr. Andry; 6, Auguste Royer.—Cobbam. 1, An imperfect fruit, one of the chief characters, the eye, quite destroyed; 2, Cox's Pomona. Correspondents should never affix the labels by pins or nails driven into the eye of the fruit.—H. F. One of the Pears was smashed in transit, and the labels reduced to pulp.—G. W. H. G. Passe Colmar.—F. H. J. The Pear is *Catillac*, which is sometimes known as the Pound Pear, a title also applied to the Black Worcester, which is regarded as Parkinson's Warden Pear, hence probably the confusion. The varieties are quite distinct. The Apple is Northern Greening.—A. M. Such imperfect specimens cannot be identified. They have been compared with the fruits in two large collections, but the characters are too indefinite.—F. E. S. 1, Norfolk Seedling; 2, Horned Pearmain; 3, Requette Blanche; 4, Scarlet Nonpariel. The labels were misplaced, and the above is the nearest we could get to the order in which they were packed.—C. L. It is doubtful if the Pear is grown in any British nursery, though it is known in some parts of France, a Poire d'Aigue, or as Poire Goudaine. It is there found to be extremely prolific, but is not much valued.

NAMES OF PLANTS: *Robesey*. Please read our rules for naming plants; but as you have transgressed them, we might make amends by sending a contribution to the Gardeners' Orphan Fund. 1, Veronica Traversii; 2, Santolina incana; 3, Veronica, not recognised; 4, Veronica, perhaps *pinguifolia*; 5, *Enonymus japonicus* var. *radiatus*, variegated form; 6, *Thuya occidentalis* var. *Veranecana*; 7, *Cupressus thyoides*, variegated form; 8, *Retinospora* *umbra* of gardens, a form of *Thuya occidentalis*; 9, *Juniperus*, perhaps a form of *sinensis*; 10, *Cassinia fulvida*; 11, a hybrid *Veronica*, perhaps Andersoni; 12, *Spirea* *Douglasii*; 13, *Enonymus japonicus*, narrow-leaved variety.—John F. Morgan. A variety of *Asparagus scandens*.—Morphy. 10, *Asplenium Trichomanes*; 11, *A. Ruta-muraria*; 12, *Marehantia polymorpha*; 13, *Euphorbia*. We do not recognise the species; we may do so later on.—W. T. G. All *Cattleya Loddigesii* useful, but not very valuable.—G. P. *Keul*. *Cattleya labiata* of an exceptionally good strain.—J. F. 1, *Nerium Oleander*. You may cut it back if necessary; 2, *Salvia coccinea*; 3, *Abutilon Boule de Neige*, not Christmas Rose; 4, *Acacia armata*, not a Myrtle; 5, not *Encalyptus*, nor anything like one—send when in flower; 6, *Cotoneaster microphylla*; 7, *Pelargonium Italia* *Unita*.—W. J. B. *Zygopetalum Mackaili*.—Constant Reader. 1, *Tridacteantha discolor* (*Rhca discolor*); 2, *T. repens*; 3, *T. zebrina*; 4, *T. z. tricolor*; 5, *T. repens* variegata of gardens; 6 and 7, utterly inadequate specimens.—S. T. *Cattleya Dowiana aurea*, a specially fine form.—E. C. *Hortford*. 1, *Miltonia candida*; 2, *Phyllanthus viviparus*; 3 and 1, forms of *Codiaeum* (*Croton*) *angustifolium*; 5, *Adiantum Waltoni*; 6, *Adiantum Paotii*.—G. H. Postal order for Is., forwarded to the Gardeners' Orphan Fund. 1, *Adiantum hispidulum*; 2, *Nephrolepis davallifoides*; 3, *Asplenium bulbiferum* var. *biforme*; 4, *Pteris cretica* var.; 5, *Rochea falcata*; 6, *Colutea arborescens*; 7, *Daphne falcata*; 8, *Ribes rubrum*; 9, *Dentizia crenata*; 10, *Enonymus japonicus*; 11, *Isobaris Darwini*; 12, *Ilibiscus syriacus*, but where are the white berries? 13, *Ma-*

houia aquifolium; 11, a variety of the common Yew; 15, a variety of the common Spruce; 16, common Yew, or a variety; 17, *Thuopsis dolabrata*; 18, a Juniper, perhaps *J. sinensis*. You must be under the impression that we have nothing to do but to name plants. Please read our rules, and on another occasion do not send more than six specimens. We do not undertake to reply by post.—P. M. 1, *Thuya gigantea* (Lobbi of gardens); 2, *Thuya baccata fastigiata*, variety with golden margins to leaves; 3, *Retinospora squarrosa* of gardens, really a form of *Cupressus pisifera*; 4, *Retinospora plumosa* of gardens, a form of *Cupressus pisifera*; 5, *Thuopsis dolabrata variegata* of gardens; 6, *Abies excelsa* var. *clabrossilliana*, if of compact dwarf habit.—W. T. Galley. *Cattleya Loddigesii*, in all cases; useful, but not valuable.—T. H. C. *Solanum nigrum*.

ONCIDIUM GRAVESANUM: *Edwin*. This is allied to, or a local form of, *O. pretextum*. It belongs to the class grouped together, according to their requirements, for the purposes of cultivation, viz., *Oncidium crispum*, *O. curtum*, *O. Forbesii*, *O. Marshallianum*, &c. These require a cool intermediate-house, with a decidedly cool, dry, resting period, after the pseudo-bulbs are fully matured. They never live long in a close, moist house, and are more likely to succeed grown as cool greenhouse plants than as stove-plants. When growing, they should have abundance of rain-water.

REST ON CARBONIS: J. Witt. Remedy there is none; and rather than waste valuable time in doctoring the plant with various washes, and meanwhile allow the fungus to spread to healthy plants, it is the wisest course to lift the rusty plant with every bit of root, and throw it into the fire forthwith.

SKIMMIA: H. C. S. The true *S. japonica*, erroneously called *S. oblata* in gardens. It is probably the variety *Foremani*, but we do not remember to have seen that variety in fruit.

SPOT IN APPLES: J. L. & S. The spots are produced by a fungus, described and figured by Mr. W. G. Smith in the *Gardeners' Chronicle*, July 11, 1885, p. 53. It is very destructive to stored Apples, spreading rapidly. If the fruit be bruised or injured, as by hail or other cause, the spores at once germinate, but they have no power of penetrating the uninjured rind of the Apple. All affected fruit should be destroyed by fire. Spraying the shoots with weak Bordeaux Mixture in spring has been recommended as a preventative.

"STOPPING" THE DIFFERENT VARIETIES OF CHRYSANTHEMUMS, SO AS TO OBTAIN SHOW BLOOMS IN NOVEMBER: W. S. We would advise you to purchase *Chrysanthemums and their Culture*, by E. Molyneux, Swamore Park, Bishop's Waltham; or one of the *Guides* issued by the nurserymen each year.

TOWNS DESTROYING GRAPES IN A VINEY: W. H. Yates. These and other birds that take to fruit at certain seasons have frequently to be kept out of vineries, by placing hexagon or other close netting over the openings by which air is admitted. Vineries in wooded districts have usually to be protected in some manner against the birds. We have known wood-pigeons to enter a vinery to obtain food.

COMMUNICATIONS RECEIVED: R. Greenlaw—H. W. Ward; J. McClellan—W. George—Baron Stackelberg, St. Petersburg—W. M. double flowers: See a recent number; we will revert to the subject shortly.—C. W.—A. Fischer de Winkheim, St. Petersburg—H. C. S.—J. C.—M. Bath—A. B. Photo, with thanks; those formerly sent are not suitable—L. V. H. Ghent; many thanks, but not suitable—W. R.—Dr. R. Sydney—Sir G. K. San Remo—W. A.—M. A.—H. F.—Amus, Bedford—S. E. H.—A. M.—J. G.—J. C.—A. H.—B. D.—J. O'B.—D. R.—W.—E. Bonavia—D.—W. H. D.—H. E. H. Krieger—F. Q. C.—S. B.—E. E.—W. P.—L. T.—H. B.—J. R. W.—G. H. Berg—F. S.—T. B.—Reader—C. Jones—G. C.—E. W. R.—F. Y.

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

THE
Gardeners' Chronicle
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THE FERNS.

PROBABLY very few people who are members of the Fern family for decorative purposes in their rooms, conservatories, or shady corners in the garden, are aware of its immensely greater antiquity as compared with that of the trees, shrubs, and flowering plants, associated therewith. The fact that Ferns produce no obvious flowers, and hence lack one of the chief popular attractions, causes them to rank invariably second to their more brilliant companions; and it is usually only the botanist who recognises that we owe the latter to the former, and the geologist who goes further still, and will even tell us that a vast percentage of the progress of the human race, and of the wealth which accompanies it, is due to the like seemingly humble family of plants. There was a period in the history of the world when all the vegetation consisted of Ferns or their allies, the seaweeds, mosses, Lycopods, and lichens, which, in the process of evolution brought about by gradual change of surface conditions, and that mysterious faculty of adaptation which is implanted in all living matter, had been slowly differentiated into separate families; and it was at this period, evidently a very vast one, that our coal formations were built up by the growth and decay of immense forests composed of flowerless plants and trees which had been so evolved, and, as everybody knows it is to those formations that we are indebted as above.

Gradually, as surface conditions became drier, and atmospheric ones less cloudy, in some subtle fashion, some members of those varied families assumed the guise of the Fir tribe, many of which to this day reveal their distant parentage by their foliage, e.g., *Ginkgo biloba*, with its Maidenhair Fern-leaves, and even, as our Japanese friends have demonstrated, a partially fern-like mode of fertilisation; while in other branches of this family the resemblance of the foliage to the *Selaginellas* is remarkable. Then, as time went on, the modification extended, flowering-plants proper appeared, and eventually, by the interaction of many inducing causes, and the struggle for existence which led to greater and greater complexity, we arrive at the present time, when the whole world teems with countless beautiful floral types, fitted for the most diverse environments; while, wherever the primeval conditions of shade and humidity still present themselves, we find the original fern denizens still surviving, and often in forms which are hardly distinguishable from those of their coal-forming progenitors. Hence, when strolling through a garden teeming with brilliant flowers, we are, comparatively speaking, in a modern atmosphere; while plunging into some ferny glen, we may with propriety imagine ourselves transported across back in the evolutionary history of the world. Doubtless, too, in the densely Fern-land forests of some tropical islands, and in New Zealand and Australia, we may still behold coal strata in process of formation, although the mind utterly refuses to grasp the fact that prior to their eventual discovery as such the present shady glades, rooted in by verdant foliage bathed in brilliant sunshine, will have been, to judge by past history, succeeded by imnumerable changes, involving inundations, subsidence, elevation, existence as a sea-bottom, &c., the phases of which will write their history in strata of deposits which the future discoverer will have to pierce if it may be for thousands of feet ere he reach the present surface, and the coal it has fashioned through its ferny outgrowth. If we could imagine a cinematograph constructed to take a picture every century of any one spot in the earth's surface, and sum all up in an hour or so on a screen, what a marvellous and incredible series of changes would it present, and yet our Ferns, could they tell the story of their descent through the ages, would have to describe precisely such a kaleidoscope. Perhaps, however, the more curious feature in this connection is the fact already alluded to, that the survivals from this immense antiquity which have retained the Fern character have done so with so little modification. If we compare the fossil Ferns, of which innumerable specimens have been perfectly preserved, with our Ferns of today, we find a remarkable resemblance in type, while the forms of fructification present such essential similarity, and the mode of reproduction today is so primitive, that biologically they seem at a standstill. No existing Fern presents the slightest approach to the formation of flowers proper; every one, even in the more diverse genera, reproduces itself in the primary cryptogamic fashion. This, too, despite the fact that many species have managed to wean themselves from the nest of constant shade and humidity, and contrive to stand hot suns and periods of drought with impunity.

We also find in these later days that wide departures from the normal types may arise as "sports," and perpetuate themselves as truly through their spores as specific forms can do; and also that in the life cycle, modifications of all sorts may occur, which only half a century

ago were undreamed of. None of these variations, however, go in the floral direction at all, and we cannot even assume them to be more modern than the normal, since they occur now-a-days numerically so rarely that their nondiscovery in fossil form goes for little or nothing, not one Fern in many millions presumably becoming fossilised in a recognisable shape, so that the chance of a fossilised variety is extremely remote. It is indeed a wonder that any have been handed down to us at all so wonderfully well preserved as we find them. If we examine the dead growth in a Fern-glen, we usually find the previous season's fronds brown, shrivelled, withered, and mostly devoured by insects, and those of the year before rotted into soil. Such frond or fragments as we find so well preserved in coal and shale, are presumably accidentals which have been suddenly submerged and buried in mud or sand while still green and living, subsequent deposits and pressure tending to preserve them intact. We are, however, now straying rather into the geologist's realm of study, which is not our province; our object being simply to point out that Ferns are not merely pretty objects for decorative purposes, but material of intense interest, really transcending in this respect the more conspicuous flowers to which they are undeservedly subordinated. Beauty consists not merely in colour, but also in form, and it is quite certain that as regards the latter, Ferns in their best and finest types far and away transcend all other foliage plants in delicacy and variety, besides being additionally interesting for the reasons above given. *Chas. T. Dracry, F.L.S., V.M.H.*

ORCHID NOTES AND GLEANINGS.

WALUWA PULCHELLA, Regel.

Those who take pleasure in "botanical" Orchids have often interesting experiences. The first occasion on which I saw the pretty plant which bears the above name was in flower about the year 1881. The plant came in an importation received from the elder M. de Saint Leger. This lot of plants included several singular-looking species, and all were said to have been collected in Paraguay. The only species of which there were many plants was that which Reichenbach described as *Oncidium O'Brienianum* in the *Gardeners' Chronicle*, January 8th, 1881, p. 90, and which he at first referred to as *O. pubes*, although a critical examination proved it to be structurally distinct. The other plant, now called *Waluwa pulchella*, though totally different, caused him to first think of *O. pubes* again, and the temporary error has since been made again in this country. The specimen I sent is probably in the Reichenbach Herbarium, and named and described, but I do not know whether it has been published.

In 1898 I received a specimen from Frau Ida Brandt, Brunnentof, Riesbach, Zurich, and I at once recognised my old acquaintance, but failed to find a name for it until I sent it to Prof. A. Cogniaux, who replied on October 6, 1898, giving me the reference to the figure and description of *Waluwa pulchella* (*Gartenflora*, 1891, t. 1311). It is there stated to have been sent by Herr Leitz, probably from Minas Geraes. The author named the genus after Count P. A. Waluczew, and considers it allied to *Gomezia*. It has again flowered at Brunnentof under Mr. H. Schlecht's care. The plant might be easily mistaken for a small *Oncidium pubes*. The slender inflorescence is densely set with flowers about 1/2 inch across, with all the

segments slightly incurved; the sepals are creamy-white, and the petals white crossed with bright rose-coloured lines; the lip is three-lobed, the side lobes being closely folded back, so that the middle lobe is extended on the narrow portion bearing the claret-coloured crest; middle lobe white, with dark rose-coloured blotches. Column with two prominent wings, ciliate on the upper edges, white, tipped with rose. The plant is also in the Royal Botanical Gardens, Glasnevin, Dublin. J. O'B.

CALIFORNIA.

CANNA MRS. KATE GRAY.

This is correctly represented in the Supplementary Plate of the *Gardeners' Chronicle*, No. 769, as of "rich orange colour," and not brilliant scarlet, as it is stated at p. 227. In fact there is no scarlet in it, and the yellow "flaming" in the throat is hardly noticeable. This variety has some analogy with America, which remains one of the best of the second lot of Dammann's "creations," but the flowers of Mrs. (not Miss) Kate Gray are larger, of much brighter colour, they have much more substance, and are more freely produced. It was originated at Alhambra, near Los Angeles, in California, in the year 1896, by W. H. Morse, an English gardener, employed at that time by Capt. Gray, and was obtained by fertilising Italia with the pollen of Madame Crozy. Out of the many attempts made, only one seed appeared to ripen, and it came very near to being lost by an accident. Mr. Morse, of course, made very many visits to his Cannas, and one morning he was accompanied by a pet Angora cat, who all at once jumped on the plant to catch a humming-bird. Under her weight the stalk of the Cannas broke, the bird and the cat went flying in the air, and Mr. Morse picked up the precious seed-pod—with what feeling one can imagine; but he was not discouraged, and tried to do the best he could under the circumstances. The solitary seed was well formed and plump, but still soft, and hardly beginning to colour. It was carefully sown, notwithstanding, and it came up in three weeks.

ERYTHEA ARMATA IN BLOOM.

The plant, of which an illustration appeared in the *Gardeners' Chronicle*, October 10, 1896, p. 425, is in bloom again, this time bearing four panicles, which are fully 18 feet in length, springing first upright above the silvery fan-shaped leaves, and then arching gracefully to the ground, like gigantic feathers, and of a yellow-green colour. This "Blue Palm," and also *Seaforthia elegans* (Archontophoenix Cunninghamii) are well worthy of being grown as isolated specimens on a lawn, for the sake of their flowers only.

AGAVE RECURVATA.

This species is very remarkable among the largest-growing Agaves, on account of its gutter-shaped, symmetrically-arching leaves, which have a very distinct glaucous colour, and minute marginal spines. The flower-scape has attained 50 feet in height, the panicle presenting a wavy and graceful outline, quite different from the stiffer *A. mexicana*, *A. Palmieri*, and *A. huachuensis*, which happened to come into bloom at the same time. Very little is known of this Agave, which is not described in Baker's *Handbook of Amaryllidaceae*. A short notice and a photograph of two pot-grown plants is to be seen in the seventh Report (1896) of the Missouri Botanic Garden. It has been found growing in South-

eastern Florida, where it appears to have been introduced, years ago, by Dr. Perrine, together with the true "Sisal Hemp" (*Agave rigida sisalana*), from Yucatan.

CALPURNIA LASIOGYNE.

This is a South African shrub or small tree, not much known in gardens, but well deserving to be grown in all temperate countries for the sake of its flowers. It has been called "the Natal Laburnum," and it looks very much indeed like the common Laburnum; its leaves, however, being evergreen, and with the peculiar scent of Foenugreek. Its racemes of yellow, scentless flowers are here produced throughout the winter.

SCOTIA BRACHYPETALA

Has much of the habit of *S. latifolia*, an old inmate of European gardens; but while this last has flesh-coloured flowers borne on the tips of the branches, the first-named species bears them as it were nestled in heavy bunches on the old wood of the bare branches, and being of the brightest crimson colour, the effect is superb, especially when the sun is declining. Dr. F. Franceschi.

A VISIT TO THE NORTH.—VI.

(Continued from p. 351.)

The city of Glasgow possesses in a large degree some of the evils that have to be contended against in London. Not only is the city densely populated, but a large proportion of the people is engaged in manufacturing businesses that contribute largely to the wealth of the Empire, but which appear to be inseparable from conditions of life that need all the alleviation that can be afforded. The toilers in London, Glasgow, or any other great city can have no acquaintance, much less intimacy, with Nature, unless the governing authorities are alive to their responsibility in this matter. Readers of the *Gardeners' Chronicle* are aware of the splendid work which the London County Council has done in the direction of acquiring and maintaining parks and gardens in all districts of the metropolis, where people may enjoy the delight of witnessing the growth of tree, flower, and grass.

Having a desire to see what has been done in Glasgow, I determined to make an inspection of—

GLASGOW CITY GARDENS.

To this end an appointment was sought with Mr. James Whitton, who superintends all of the parks, open spaces, and Botanic Garden, under the control of the Parks Committee of the City Council. Mr. Whitton very kindly spent one day in driving a friend and myself to the most important of the fifteen parks. What we saw upon that day was sufficient to convince us that in the work of securing for the people means of healthy recreation and enjoyment, Glasgow is behind no other city. More than this, in some respects, Glasgow city gardening has attained to a condition unequalled in any other city. I know of no instance where a city possesses such collections of plants as there are in Queen's Park, Camphill, and other parks in Glasgow. In London, our County Council's parks are maintained satisfactorily; but in none of them has there been formed collections of indoor plants, except in a few instances where a winter garden has been furnished. Londoners who wish for collections of exotics go to Kew, and there they have an unrivalled collection. At several of the Glasgow parks collections of

Carysanthemums are cultivated, just as they are in London; but beyond these there are greenhouse and stove plants, *Nepenthes*, and *Orchids* in very large numbers.

QUEEN'S PARK AND CAMPHILL.

Queen's Park has an area of 90 acres, and was acquired in 1857 at a cost of £39,000, this price including 53 acres of "feuing" land. It is situated on the south side of the city, and at the end of the long, straight Victoria Road there is an imposing entrance with thirty or more steps. My visit, it will be remembered, took place at the end of the summer, and at that time a very long ribbon border proceeded on the left and right of the entrance. There are more flower-beds on a terrace north of the flagstaff and bandstand, and in the closely-cut greenward large beds of *Rhododendrons*. We entered one of the many glasshouses—the stove—and noticed fine plants of *Musa Ensete*, 15 or 16 feet high; also excellent specimens of *Dendrocalamus sikkimensis*, 18 feet high. In the *Orchid*-houses were numbers of *Cattleyas*, *Cypripediums*, *Odontoglossums*, *Mastodermis*, *Dendrobium* (especially *D. Dalhousianum*), large baskets of *Lælia anceps*, in fine growing condition. *Calanthes* are less successful, the Glasgow atmosphere like that of London does not suit them in early winter. Collections of *Nepenthes*, *Sarracenias*, and *Nerines*, were remarked, and the *Nerines* are said to succeed splendidly. One house contains a grand lot of greenhouse *Rhododendrons*, some of which plants are 15 feet or more in height. R. Nuttallii, R. Veitchii, R. Countess of Haddington (a pyramid plant 8 feet high), and R. Dalhousie, were some of the best specimens. The collection has since been augmented by the addition of a number of Messrs. James Veitch's hybrids.

In other houses were Tree and Dwarf-growing Ferns, Ivy-leaved and zonal *Pelargoniums* (which filled one house with a prodigious display of colour), *Restio subverticillatus* (from Edinburgh Botanic Gardens, where there is a very remarkable specimen); *Araucaria excelsa*, *Agapanthus umbellatus* Mooreana in flower, *Panacratium*, *Clerodendrons*, *Hydrangeas*, and many other species of plants. This excellent range of houses was built some five years ago by Messrs. Simpson & Farmer, and consists of twelve span-roofed houses, 80 feet long each, and varying from 12 to 30 feet in width, proceeding from either side of a central corridor 200 feet long. As many as 3500 *Chrysanthemums* are grown here, in addition to early-flowering varieties.

Camphill is attached to Queen's Park, and has an area of 58 acres, acquired in 1894 at a cost of £63,000. It is really an old residential garden, and is peculiarly attractive, from the fact that the charm of the old garden remains. There have been necessary modifications, but the fruit and plant-houses, borders of hardy flowers, the old walls (some of them covered with *Magnolias*), the kitchen-garden plots, and hardy fruit-trees, have been preserved. The kitchen-garden plots are now adapted for nursery and experimental purposes. The poorest people in Glasgow can therefore enjoy the same privileges as the owners of large gardens themselves, so far as the sense of sight goes, and this is a boon not easy of over-estimation.

Among the old trees that remain are Turkey Oaks, Beeches, Elms, an avenue of Irish Yews, a fair example of the Weeping Ash, and I noticed with surprise a plant of *Avicula pinnata*. Mr. McIver is the resident superintendent for Queen's Park and Camphill, and, as I have briefly shown, he has the care of large collections of plants. As we walked back to the

conveyance, Mr. Whitton remarked (he has an experimental garden at Queen's Park) that latterly Beeches and common Oaks are failing to grow in the city, but the Turkey Oak will succeed. So far as his expe-

CLEMATIS BRACHIATA.

For the opportunity of illustrating this plant (see fig. 111) we are indebted to Mr. Lynch, the energetic and obliging Curator of

NOTICES OF BOOKS.

DIE MODERNE TEPPICHGARTNEREI. Von W. Hampel. (Berlin: Verlagsbuchhandlung Paul Parey, S.W., Hedemannstrasse, 10.)

THERE is, now-a-days, quite a revival in favour of carpet-bedding, so that there seems good reason for the publication of books dealing with the subject. French and German authors have furnished these, but at the moment we fail to recall any modern work in English devoted entirely to formal gardening. There is no excuse for spoiling naturally tasteful gardens by the introduction of one or more beds where coloured plants are so arranged as to look from a little distance like painted tiles; but as curiosities in large grounds, or in conjunction with certain styles of architecture, the prim beds may not be amiss. Herr Hampel gives many excellent designs, ranging from simple to very elaborate compositions, and supplements this with letterpress descriptive of necessary, suitable, and possible plants, and details of their habits of growth and proper training. We learn that the Eiffel Tower itself may be built up with Sedums and Alternantheras, and crowned with a Yucca. "*schr' original!*"

A PRACTICAL TEXT BOOK OF PLANT PHYSIOLOGY. By D. T. Macdougall, Ph.D. (Longmans, Green & Co.)

THIS is one of those books which exemplify the prevalent tendency to take nothing for granted. It is not sufficient to say that a Mimosa is sensitive to touch, it is not even enough to show the phenomena; the onlooker must be induced to make the experiment for himself. The principle here is, of course, beyond all cavil, though its application is sometimes needlessly particular. We do not all want to be practical physiologists, but no one should consider his education complete who has not a general acquaintance with the principles, and, to a large extent, with the facts of physiology. Making allowance for the necessary modifications, the physiology of plants and that of animals, including human beings, is the same. As the physiological study of plants can be more readily undertaken than that of animals, and is not open to the same objections, it is more convenient for the general student, whilst, of course, it is essential to the student of plant-life. Reverting to the illustration of the sensitive plant, it no longer suffices to know the fact, it is imperative to find out all that can be found out about the how, the why, and the wherefore. This can only be done by thorough investigation of structure and careful comparative experiments under natural conditions. These are always complex, and in order to understand them, it is generally necessary to isolate the conditions and measure the effects of each separately.

This is the work of the laboratory, and can only be carried out by the use of appropriate apparatus not accessible to cultivators or general students. The book before us is intended as a guide to laboratory work. The table of contents is in itself a full analysis of plant-physiology, while the text abounds in directions for the practical study of the different phenomena of plant life as by, or connected with, mechanical agency, chemicals, water, gravitation, temperature, electricity, light, the movements of fluids, food and its sources, respiration, fermentation, digestion, growth and reproduction. The table of contents, as we have said, is a programme in itself; the index is equally copious, and the illustrations are numerous, so that we have in Dr. Mac-



FIG. 111.—CLEMATIS BRACHIATA: FLOWERS GREENISH-WHITE.

viency has gone, Rosa rugosa, however, is the hardiest and best plant to be got. On the very barest, most bleak, or smoky positions, this beautiful Rose holds its own better than any other plant—tree or shrub, P.

(To be continued.)

the Cambridge Botanic Garden. The flowers are greenish-white, and deliciously fragrant. Though grown in a greenhouse, it would probably be hardy except in severe winters, as it has already been tried out-of-doors at Cambridge for three or four years. It is a native of South Africa.

dogal's pages an easily consulted epitome of vegetable physiology, suitable not only in the laboratory, but for purposes of general reference.

WORMS OF GARDEN AND LAWN.

(Continued from p. 311.)

II.—THE EARTHWORM.

UNTIL quite recently there were two species of annelid, one a Lumbriens, the other an Allolophora, which went by the name of the common Earthworm. So little attention had been paid to their differences that endless confusion found its way into text books, owing to the differences in the types selected for description. Less than ten years ago a learned demonstrator used to carry an Allolophora into the lecture-room and describe it as a typical Lumbriens. Now all is changed, and chaos has been reduced to order. There is not the slightest excuse for any lecturer to-day if he confuse the two genera. As the term Lumbriens is the oldest name in use for a worm, I propose now to give a description of that species of worm which correctly bears the name. Later on we shall study the rival worm which is often found with it and mistaken for it. The older systematists called these worms Lumbriens terrestris; it is now customary to speak of them as the Earthworm (Lumbriens herculeus) and the Longworm (Allolophora longa). The synonyms will be dealt with later.

In digging up a plot of fairly rich soil the gardener is almost certain to come across numerous specimens of a large worm of a warm brown colour, which moves rapidly, looks sleek, covers the hand with slime, becomes iridescent when the light plays upon it, has a flattened tail and a dirty-yellow or raw sienna girdle. This is the common Earthworm, the old Lumbriens terrestris. We will examine it with some care; and it will be well to begin with the head.

It will be observed that the second ring has a kind of mortise in its back. This is from the head or prostomium, which according to our definition in the introduction, is mortised in Lumbriens but dovetailed in Allolophora. This is in itself sufficient to distinguish the true Earthworm from its rival the Longworm. Working backwards we see that the body becomes larger in the region of the tenth segment, and if the worm were opened at this point it would be found that all the more essential organs, reproductive and nutritive, lie in this locality; with these, however, we are not concerned, as we are eschewing internal characters.

On either side of the fifteenth ring we may find an opening, which bears the name of the male pore. It is carried on a pad or cushion of swollen tissue. As we work backwards we come to the girdle. This consists of six rings, beginning with the thirty-second. If the worm is in good condition, it will be possible to see on the underside of the girdle a pair of bands extending over the four inner rings, i.e., from thirty-three to thirty-six. These bands are known by the ugly term tubercula pubertatis, there is no popular English name. In all the true British Lumbriens this band is present, and always extends over the four inner girdle segments. In the other genus the band is usually replaced by pores similar to those on the fifteenth ring. They are not always continuous, nor is their number unvarying as in Lumbriens.

The girdle is an indication that the worm is adult. Each worm possesses both male and female organs, but when eggs are to be laid, two worms approach each other from opposite

points, and when the girdles are joined the cocoon or egg-case is produced. Under the microscope the girdle tissue is seen to differ from that in other parts of the body.

Behind the girdle there are no other organs of importance, but it will be seen that the tail flattens out as we approach its extremity. The worm in its normal state is about 6 inches in length, but when fully extended is at least half as long again. It may usually be known by its size and colour alone. It is much larger than any other species of Lumbriens found in England, though an Irish species (*L. papillosus*, Friend) closely resembles it, as does also another species found on the continent. Though its size agrees roughly with that of the Longworm, the colour is considerably more ruddy, and the Lumbriens has a more graceful contour.

The Earthworm is a greedy feeder. It sometimes does a good deal of harm among Cabbage and other plants by drawing the drooping leaves into its burrow during the night, when they have been newly transplanted. On the whole, however, the services of this species are beneficent. It is a great collector of fallen and decaying leaves and other vegetable debris. When it lives in garden-soil where manure is freely used, it passes the vegetable matter through its body, and so changes it into a fine, rich mould. It is a cruel and unwise thing to cut the worm to pieces with the spade. The nervous system of the earthworm is highly developed, and this renders it exceedingly sensitive. As the worm has a very important place in the economy of Nature, we do not feel prepared to give any advice as to the best means of getting rid of it. If it sometimes gets out of bounds, its eradication would be one of the greatest losses we could sustain.

It may be well here to say a word or two respecting its nearest allies. In our next, we shall deal with the purple and red worms and their allies, so that only the larger species need here be mentioned. The total number of species of Lumbriens at present known to science does not exceed ten, and probably the true number, when rightly defined, is eight. Five of these are found in Great Britain, but up till the time of writing, one has never been found out of Ireland. This species I have named the Papillose Worm. Its girdle begins one segment further back than the girdle of the Earthworm, but it covers only five segments. However, the tubercula pubertatis, which are a good character by which to determine species, extend over four rings, viz., the 24th to the 27th, as compared with the 32nd to the 36th in the common English form. In this respect the Irish worm (*L. papillosus*) finds its counterpart in a Continental species (*L. melibeus*), which has five girdle segments (29 to 33), with the band on the four hindmost rings.

Since Beddard's splendid work on Annelids (*Monograph of the Oligochaeta*) appeared in 1895, a new Lumbriens has been found in Normandy, which closely resembles our English form. It proves to be a missing link, for the girdle and tubercula fill a vacant place in the list. It is named *L. Studeri* by Mons. Ribaucourt, and has the girdle on segments 21 to 26.

In examining the common Earthworm, we find that a series of openings, called dorsal pores, begins between the seventh and eighth rings. Much has been written respecting the use of these apertures. We shall have occasion to discuss the subject when we take up the study of the Brantling. For the present it is sufficient to note its position, as it differs from that of the Irish worm, whose first dorsal pore is between segments nine and ten. The

Earthworm is found not only in England, but generally throughout Europe, North America, and in Siberia. It may, however, be questioned whether any species of this genus is a native of any other continent than Europe. They differ entirely from the Asiatic types as well as from the African, and the presence of our common Earthworm in America is probably due to emigration.

The following summary of external characteristics will be abundant for the identification of the common Earthworm (*L. herculeus*): Length about 6 inches; average number of rings 180; colour warm brown, lighter on the under surface; girdle raw sienna, extending over six rings, from 32 to 37, on four of which (33 to 36) the tubercula pubertatis appear as a band on each side; first dorsal pore between the 7th and 8th rings; male pore on the 15th, conspicuous; tail flattened; bristles in pairs.

[Article III. will deal with the red and purple worms.] *Hilberic Friend, Chichester.*

FORESTRY.

FANCIES AND FACTS IN BRITISH FORESTRY.

RABBITS AND WOODLANDS.—When our Saxon and Danish kings imagined their hunting-grounds were in danger of getting exhausted, they usually took a look round, selected a nicely watered, wooded, and, generally speaking, fertile tract of country, and issued a proclamation to the effect that this particular tract would henceforth become a royal forest. The advantages of this proceeding to the king were many. He became a landlord at once, and provided himself ample facilities for indulging in the pleasures of the chase, and of letting the privilege on lease to his barons and favourites, in return for which he expected and received substantial benefit.

In much the same way, but in a more legitimate fashion, the landed proprietor who wants sport to-day follows the royal example of a thousand years ago. He sets apart certain portions of his estate as game preserves, and in order to make the most of the ground, plants trees upon it to increase its efficiency and improve its appearance. As these trees increase in size, the number required to produce the desired effect becomes less, and thinnings are made from time to time according to the wishes of the proprietor, or the ideas of his agent or forester, and these thinnings are either used on the estate, or sold. The sum total of these proceedings has lately been known by the name of British Forestry, the primary object of which is the provision of suitable conditions for rearing, preserving, and shooting pheasants and rabbits.

For the last 200 years or so, attempts have been made from time to time to turn what was formerly known as the "vert," and now as the "covert," to better account, and in this way estate woodlands came to be included amongst the minor sources of revenue, and as a reserve of capital which could be made available in time of emergency. This commercial aspect of the case brought into existence the British forester, and to his zeal in the development and improvement of his particular section of the work may be traced that slight resemblance to economic forestry which English wood-management exhibits to-day. Unfortunately for him, his work has always been of an uphill nature, and while his endeavours have been made in one direction, those of his hereditary enemies, the rabbit and the game-keeper, have been made in the opposite. The

recognition of this fact doubtless gave rise to that beautiful dream of the enthusiast on forestry—a rabbitless game-covert, the realisation of which is either so exceptional or so short-lived that it is hardly worth taking into account.

To insist therefore that rabbits should be excluded from English woods altogether, and that the latter should be maintained exclusively for the production of timber, is simply to ignore one of the chief objects which estate owners have in view when planting or maintaining woodlands.

It may be said that rabbits are not game; that many sporting proprietors profess to dislike them in excessive numbers, and give their keepers orders to "keep them down"; and that pheasants are the only legitimate occupants of a *bona fide* game-covert. All this may be true enough; but it is equally true that rabbit-shooting is as good a sport in its way as pheasant-shooting, and has the advantage of being infinitely cheaper and less troublesome; and we never heard of a sportsman despising rabbits because they did not come within the legal or technical definition of game.

It is quite true that many (one might almost say the majority) of our sporting proprietors, who keep their shooting in their own hands, object to an excessive number of rabbits, and instruct their keepers to kill them down; but with what result? The keeper knows well enough that it is not the rabbits themselves, but the damage they do, that is objected to; and that this damage is assessed, not by its actual, but by its visible dimensions. As a rule, rabbits do not make their depredations apparent to ordinary observers until the shooting season has begun, when it is too late to take measures of suppression, beyond the included in a day's covert-shooting. By this time, three-fourths of the actual damage, in the shape of wholesale destruction of seedlings and young plants, has already been done; and compared with this, further damage is unimportant, so far as the forester is concerned. It is a well-known fact that a proprietor with a gun in his hand is much less disposed to find fault with a large head of rabbits than when he is only taking a walk round his woods with the aid of a stick. The keeper knows that if he can stay off the day of reckoning until the shooting season, an excess of rabbits becomes more of a virtue than a fault; and then there is always the "season" to fall back on.

Rabbits may have a bad breeding season sometimes, but the only way of bringing that desirable event about that we know of is by means of shooting and trapping. A good or a bad breeding season, therefore, is usually determined by the energy, or lack of it, displayed by the keeper during the early months of the year in the way of conscientious foresting, netting, or shooting. We fear the usual method he employs of carrying out this operation is somewhat as follows:—He sallies out with his pipe, his gun, and his ferrets, drops the latter into a burrow, lights his pipe, and stands easy. In a big burrow not more than half the rabbits bolt; of those that do, he kills perhaps one out of three, and then spends the next hour or two in digging out his ferrets. At this rate, about two or three burrows are gone over in a day; the process is repeated daily (weather permitting) for about a fortnight, and the rabbits are then considered "kept down."

But occasionally one comes across an estate where the damage has been so severe, or the forester's constant representations have been so persistent, that the rabbits have really been got down in earnest. In the latter case the forester puts on a cheerful face, fills his

blanks and odd corners up with young trees, and feels that British forestry has a future before it after all. For a couple of years, perhaps, all goes well, then the estate-owner and his old sporting friends compare notes. This is the place where A. shot his rabbits so well two years ago. B. remembers the fun they had with the rabbits in that particular covert; and the keeper casually reminds C. that this was the hide in which he shot thirty rabbits in one stand, and regrets that the chance of doing it again is gone now, worse luck. The proprietor explains to his guests the enormous damage the rabbits did, and how he was reluctantly compelled to get them down; and then they all sigh gently, and change the subject as a painful one. Meanwhile, the keeper has taken all this in, and knows he is on safe ground again. Next year the rabbits increase (season, of course), and nothing is said; the year following they increase still more, and in a short time things are where they were, and the forester's trees are not where they were, that is the only difference.

The above state of affairs is what goes on in ninety per cent. of the estates throughout the country, and will go on in spite of all that may be said or argued against it. One may suggest a remedy here, another a remedy there, but none actually exist, for the simple reason that the rabbits provide sport for the sportsmen, while the trees only provide sport for the rabbits. Extinguish the sportsman, and you may extinguish the rabbit, and in all probability the wood as well. A. C. Forbes.

PLANT NOTES.

ROSA CINNAMOMEA.

All those who like plants with tinted foliage in the autumn should grow this Rose, whose leaves turn to a pretty shade of colour when dying off, varying from brown to cinnamon-red and yellow. I suppose it derives its specific name from these characteristics, as I have not discovered anything else relating to Cinnamon in connection with it the young bark. The plants at Belloir grow in full sunshine against a fence painted blue, which show off their autumn tints to perfection. Some old stock plants growing amongst Rhododendrons in one of the woods have not coloured, owing to their shady position. The plants here are all of the double form, but doubtless the single one would colour equally well. It is a plant of small growth, with numerous small thorns on the stems, and its leaves are of the size and very similar to those of the Scotch Rose—*R. spinosissima*, the flowers rose-coloured in the centre, fading off almost to white at the edge, and are pretty when grown in the shade, but almost useless in a sunny position. W. H. Divers, Belloir Castle, Grafton.

ARGENTUS STECHADIFOLIA.

In the *Gardeners' Chronicle* of November 10, 1900, I find a notice concerning several species of *Aretotis* which interests me, as I was the introducer of *A. stegadifolia* into Europe. This very lovely plant was brought into commerce by Messrs. Haage & Schmidt, Erfurt, only a short time ago. The first seeds of this plant I collected last year only, on alluvial sands of the Tsochamb river for the above-named firm, who wrote to me by the last post that they consider it as one of the best things I ever sent from this country. Mr. Gumbleton, in his notice, does not believe it to be an *Aretotis*, but thinks it a *Calandula*. He needs only to consult Harv. and Sond., *Fl. Cap.*, iii., p. 151, to see that he is mistaken.

It is a species, that is not at all doubtful; but it is, as we call it, a very good one. He has seen, probably, only specimens with entire leaves, but they are very polymorphic. The name *A. grandis* is objectionable; *grandis*, Less., is a variety of my plant which does not occur here. Lovers of S. African plants introduced for the first time in Europe by the writer of these lines, will find in the general Catalogue of Messrs. Haage & Schmidt for 1901, a good lot of such plants, which will mostly be easily recognised by the words, South Africa, or South-west Africa. *Kauf Diener, Forstwirtschaftliche Station, Braukwiter, German S.-W. Africa.*

FOREIGN CORRESPONDENCE.

OLD HYACINTHS.

Most of the varieties referred to in the *Gardeners' Chronicle*, p. 310, are offered in a very elaborate descriptive bulb catalogue, published in English in the year 1769, by the firm of Voorhelm & Schneevogt, successors to Voorhelm & Van Zompel, of Haarlem. It contains 108 pp., with a supplement of 32 pp. No fewer than 15 pages are devoted to Hyacinths, with accurate descriptions of nearly 200 double red, 250 double white, and 300 double blue varieties; nearly 200 single blue, over 100 single white, and about 70 single red varieties. The appendix "of many new sorts of Hyacinths," &c., describes 52 double reds, 19 double whites, 65 double blues, 81 single blues, 31 single whites, 7 single yellows, and 61 single reds. This catalogue contains most valuable information about the history of these and other florist's flowers. "Moreover," says the author in the preface, "the most part of Dutch and French names are English, to please such British florists who might be unacquainted with that language." So we find "Flonker Ster (Sparkling Star)," "Konig's Kroon (King's Crown)," &c., a system which might be useful to avoid confusion, even in our days.

A catalogue without date, but published between 1814 and 1820 by E. H. Krelage, Haarlem, contains all the varieties referred to in the *Gardeners' Chronicle*, with only two exceptions. Only one of these, viz., *Madame de Saint Simon*, is still to be found in the collection of this firm. There are, however, some other Hyacinths of the same period which still exist, although in very limited quantities; indeed, in a few bulbs of each variety only, viz., *Globe terrestre*, *Xe plus Ultra*, *Passie ne plus Ultra*, *Grand Monarque de France*, *Sphera mundi*, *Eendracht*, and some others. As a rule, these old-fashioned double Hyacinths are very late bloomers, and either do not propagate at all, or so slowly that they are of no use for present trade purposes. Consequently they have generally been abandoned, and a few specimens only may still be found in some old nurseries which keep them as curiosities. Most of these used to be shown almost yearly in Messrs. Krelage's show beds of Hyacinths, arranged for the last time in 1891. All the varieties named in this paper on p. 310 are still remembered by my father, who knew them all in his youth, when they were reckoned among the more inferior trade varieties. His library contains many drawings and engravings of the most famous Hyacinths of the period 1750-1800. E. H. K., Haarlem.

CACTUS DAVILLAS LORELEY AND BRIMA.

These are two quite distinct varieties, and both of German origin (*See* p. 313—"The Manufacture of Confusion.") Loreley was sent out in 1897, and was then the best of its colour—

a soft rosy-mauve, with lighter though not pure white centre, an abundant bloomer, with very graceful flowers. *Brema*, sent out in 1899, has much larger flowers, of a deeper shade of rose, and pure white centre; most effective, although not of true Cactus shape, and perhaps somewhat too heavy. The two varieties cannot be confounded one with the other by anyone who has once seen them, provided the plants or flowers are true to name. *E. H. K., Haarlem.*

FRUIT REGISTER.

MIRABELLE PLUM.

A NEW variety is figured in the *Revue Horticole*, for October 16, under the name of *Gloire de Louveciennes*. The fruit is of the size of a pigeon's egg, citron-yellow, with rose coloured spots. Flesh firm, sugary, with a slight Apricot flavour.

PEAR MUNZ APOTHEKERBIENE.

(*Garten Flora*, October, tab. 1491.)

A medium-sized Pear, obovate, oblong, with a stalk rather more than 1 inch long, continuous with the fruit. Skin yellowish, eye open, flesh white, of good flavour; ripe in August.

FLORISTS' FLOWERS.

NEW CHRYSANTHEMUMS.

GROWERS of the popular autumn flower must not be surprised, and especially those who belong to the class of novelty hunters, if they find before the season is over something like a revolution in the state of affairs. There is every indication that there will be a somewhat keen struggle for supremacy among the seedling raisers this year. Ever since the first appearance of Australian novelties there has been a marked increase in number, and certainly a higher standard of excellence perceptible in the succeeding instalments that we have received from our Australian growers; and most persons will agree that during the past two years there has been something like a decline in the quality of the continental seedlings generally. Mr. Pockett, Mr. Kerslake, and Mr. Brunning are certainly a trio to be reckoned with, and their productions have this autumn turned out well. Especially grand is Mrs. T. W. Pockett, a Japanese variety of fine proportions, having narrow florets very closely and compactly arranged, forming a fine, deep flower not unlike a Carnot, but of a pure yellow tint. Then *Millicent Richardson* is another fine variety, very large in size, with florets of great length; colour pale rosy-amaranth, reverse silvery. C. J. Salter, a pure pale yellow, is well known, and is again good; Lord Roberts, which won a Gold Medal in Australia, is a brilliant deep golden-bronze, with inside of chestnut-erimson; Nellie Pockett is known to everybody; Mr. T. Carrington, Australia, and several of the older ones are probably still as popular as ever.

Of a very fine type is Frank Hannaford, a Japanese incurved flower with narrow grooved florets, very close and deep, colour golden-bronze; Mrs. Harry Emerton, of fine form, long and drooping florets, colour golden canary-yellow, is equally meritorious; *Blanda* is immense, and deep in build, and of a rosy-amaranth colour with silvery reverse. There are many others bearing names strongly suggestive of patriotic or domestic feelings.

Amongst some of the newest varieties, and which will not be distributed till next spring, I specially note *Henry James*, a noble bloom of the old *Oceana* type, with deep incurving florets of great width, colour a lovely shade of soft chrome-yellow; *Countess Cromartie*, soft lilac-mauve, shaded pale purple, with long, flat florets; *S. H. Croucher*, a Japanese incurved, with broad grooved florets, deep in build, colour a fine pure golden-yellow of a very clear tone. Miss Linda Sewell; this is a distinctly large Japanese of a fiery reddish-crimson, with a gold reverse. Others, such as *Justice Way*, crimson; *Princess Patricia*, purple-amaranth; *Capt. Lee*, a warm golden terra-cotta with bronze reverse, are all decidedly promising. *C. H. P.*

base of the lamina will be seen to be set upon the petiole in a straight line, and to be somewhat erect. In *Chamerops humilis* (fig. 113), the base of the lamina is reniform, the large ligula 3-lobed. Indeed, whilst *Chamerops humilis* has the undermost segments of the lamina directed away from the petiole at an acute angle, those of the *C. Birroo* are crossed over the petiole. I took the following notes on the spot:—Petiole up to 1'10 m. long, 2.5 cm. broad at the base, 1.5 cm. broad under the apex, the apex dilated to 3 cm.; ligula 3-lobed, lobes sub-equal, the middle one somewhat prolonged, all obtuse; spines remote, geniculate, as much as 3.5 cm. long, very irregularly arranged; lamina strong, glabrous, reniform, with 32 segments, which are bifid for

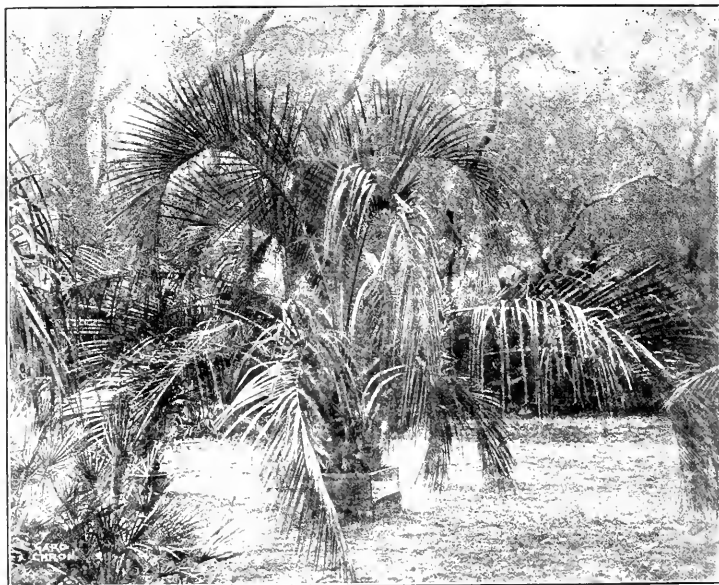


FIG. 112.—COCCOLIBA YATAI.

GARDEN PALMS.

CHAMEROPS BIRROO.—In the nurserymen's catalogues this Palm (fig. 113) is seldom to be found—at least, under this name. But why is it? I have looked for the plant for many years in different botanical gardens and private collections, but nowhere could I find it. Some time ago I at last found fine specimens on the Riviera. The first one I saw was in the famous Palm nurseries of Mr. Winter, at Bordighera (Italy), of which I took a photograph. Afterwards I found very fine old male and female specimens in the Villa Thuret, at Antibes, where Mr. Naudin lived for so many years after the death of M. Thuret.

I think *Chamerops Birroo* is a mere variety of *C. humilis*; but it is a very characteristic one. Up to the present I have not seen flowers or fruits, but I hope to get them in due time. Two characteristics are significant of this variety, viz., the very long spines of the petiole, which are yellowish, up to $\frac{3}{4}$ centimetres long, and geniculate, and the base of the lamina of the leaf. If the ordinary *Chamerops humilis* be examined, the

more than half their length; old spathes unilaterally split down, glabrous, 15 cm. long, 5 cm. broad. A bushy plant, with one or more stems, about 2 metres high.

I have still to mention that a plant in the Villa Thuret bears a label with the note that it is a descendant of *C. macrocarpa*. Whether or not this label was in Mr. Naudin's handwriting I could not make out. The *C. macrocarpa* is not a very distinct species so far as I can see, as it is impossible to say from the fruits where *Chamerops humilis* begin, and where *C. macrocarpa* ends.

COCCOLIBA YATAI, HORT.

This Palm belongs to that group of *Coccoloba* that was introduced into the gardens of Northern Europe some years ago from the Riviera—fine, strong specimens of it, together with *C. campestris*, *C. Gaertneri*, *C. australis*, and *C. Yatai*. These have all a more or less similar habit, and to distinguish them is by no means always easy. The most distinct one is the *Coccoloba Yatai* (fig. 112), the leaves of which attain to a length of 4.25 m., are recurved in a wide circle, with green, very long pinnules, up

to 75 cm. long, and 1 to 1.5 cm. broad: black spines on the long petiole, and a vagina merging into a brown fibrous network. Cocos Gaertneri, on the contrary, has very short petioled leaves, which are almost erect, and bluish-green. I cannot say whether this is a distinct species, or only a garden form, as I have not seen flowers and fruits.

Cocos campestris is a well known and long ago described plant. So also is C. australis. Now, what is Cocos Blumenavii, Hort.? At first sight it very much resembles Cocos australis, but closer inspection shows some difference. Whilst in Cocos australis the pin-

(Gros Colman's rupestris). This hybrid, though very healthy, has never yielded any but male flowers, never having borne pistillate blooms. The pollen is very effective, and I have with it artificially fertilised varieties with recurved stamens—Madeleine, Angevine, &c. Four years ago I grafted one of these stocks on one of the hybrids I had obtained containing seven-eighths of Vinifera sap, and only three-eighths of American sap (*sic*). Last year the stock sent up one shoot. I immediately observed a difference between the foliage of this shoot and the foliage of the other plant of Colman's rupestris that remained intact and

Daniel's theory, induced on the shoot an inflorescence of flowers that were, in part, hermaphrodite. It is observable that the stock contained seven-eighths of the vinifera sap, originating from Vines with decidedly hermaphrodite flowers; the stock itself was a hybrid of vinifera and American origin. Vinifera sap predominated, and resulted in the formation of hermaphrodite flowers by a true asexual hybridisation. Such is the explanation I find of this unusual fact.

"I may add that, on this subject I have several experiments under observation, wishing to discover if by grafting, and so rendering predominant a sap common to the stock and to the graft, it is possible to improve the fruit, or induce resistance to phylloxera in important vineyards. Already accident has enabled me to transform, by grafting, a 'foxy' and tardy hybrid into a Grape entirely free from 'foxiness,' and ripening very early."

COLONIAL NOTES.

CEYLON.

We hear that, commencing with the present year, it is intended to issue a new botanical periodical to be called *The Annals of the Royal Botanic Gardens, Peradeniya*. It will be a journal of pure and applied botany, and will contain chiefly the results of work performed wholly or in part in the laboratories and herbarium of the Ceylon Botanic Gardens, or upon material supplied by the gardens. It will also contain notes, papers, and reviews, dealing with general tropical botany and its applications; papers written in French and German will at times be included, and there will be illustrations as required. Exchanges will be gladly made with other scientific journals. Among the papers that may be published within the first two years are:—History of the Botanical Department in Ceylon, by the Editor (J. C. Willis); Research Institute of these Gardens, by the Editor; Life History of the Cacao Canker, by J. B. Carruthers; Revised Catalogue of the Phanerogamic Flora of Ceylon, by J. C. Willis; Revision of the Podostemaceae of India and Ceylon, by J. C. Willis; Ceylon Ebenaceae and their Timbers, by H. Wright; Botany of the Maldives Islands, by J. C. Willis and J. S. Gardiner; Notes on *Hemilea vastatrix*, by C. Holtermann; Citronella Oil Industry of Ceylon, by J. C. Willis and M. K. Bamber; Sapotaceae of Ceylon, by H. Wright; Phylogony of the Sympetale, by J. C. Willis; and Growth in Thickness of Tropical Trees, by H. Wright.

SOUTH AFRICA.

Grahamstown.—We have Palms, &c., growing here, but you have near at hand, in France and Italy, much finer growths. Want of sufficient moisture is the chief cause of this. Climates here are very local; 100 miles to the west, at Cape Town, they get over 10 inches of rain; about the same distance to the east of us, Natal, the rainfall is in excess of Cape Town, again. Our average is 25 inches; but some years 10 to 12 inches only have fallen.

I may mention that I have recently sent to Sir W. T. Dyer some specimens of germination of *Aracaria Bidwilli*, which comport themselves after the way of *Rhizophora conjugata*, as shown in *Nat. Hist. Plants*, Kerner and Oliver, p. 603, article on "Cotyledons." There is, of course, the difference that the fruit of *Rhizophora* remains suspended on the parent tree, while the *Aracaria* is supported by the surface of the soil; but the pericarp and cotyledon separate from the future young



FIG. 113.—CHAMEROIS HUMILIS VAR. BIRRÖO. (SEE P. 370.)

nules are arranged in groups, those of C. Blumenavii are very regularly disposed, never in groups. Whilst the spathe of C. australis is glabrous, that of C. Blumenavii is woolly or hairy; whilst the fruits of C. australis are elongated and tasteless, those of C. Blumenavii are broad, depressed, and have a fine Apricot-flavour. I do not hesitate to declare that Cocos Blumenavii, Hort., is the true Cocos criospatha. Dr. Udo Donner.

MIXED GRAFTING IN RELATION TO THE SEX OF PLANTS.

In the *Comptes Rendus* for Sept. 2, 1901, is a paper by M. A. Jurie on the sexes of plants as influenced by mixed grafting. He says that:—"I have for ten years possessed two plants of a hybrid Grape of M. Millardet, No. 160

was beside it. The leaf was more puckered, of a deeper green; the veins and the wood were also redder. All these differences showed the influence of the graft, the leaves of which are puckered, are black-green, and the wood of which is very dark red.

"This year I pruned back the shoot to two eyes, the internodes being very long, the eye longer than the eyes of the graft; this eye yielded a sturdy branch, shot out vigorously, and at the third node of the branch there grew a long inflorescence which, to my surprise, developed sufficient fruits to form a bunch. The fruits formed enlarged normally. This is an exact statement of the facts.

"From the appearance of this shoot it was possible to effect, with the grafted portion, mixed grafting; the influence of the elaborated sap of the graft, in conformity with M.

plant in the same way. This, of course, is known to persons who have grown this *Aracaria* from the seed; but I do not find the fact named in any book to which I have access (see "Masters' Anatomy and Life History of Coniferæ," *Journ. Linn. Soc.*, 1889, xxvii., p. 231, E. Tidmarsh).

The Week's Work.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Lanertheven, Peeblesshire.

Cucumbers.—My latest Cucumber plants are rather more backward than I care to have them, still, they will come in useful at a time when the plants now in bearing are on the wane, and so useful are these late Cucumbers that no gardener need be without fruits in February and March if the plants are kept steadily growing. A temperature of 65° to 70° by night, to 70° or 80° on fine days, is generally recommended, and fruit-bearing plants no doubt produce the finest Cucumbers under this kind of treatment. It largely depends upon a good start being given to the plants, and their being kept steadily growing in a minimum degree of warmth of 60°, and a maximum of 70°, and a bottom-heat of 75° to 80°—stable-heat and tree-leaves being employed to afford the latter. These plants should not be stopped till January, the foliage should be kept clear of the glass, and not syringed. If it be practicable, the lights should be covered with some warm material at night. Plants in full bearing should be top-dressed with horse-droppings and loam, given a little at a time, and as often as may be necessary. If bottom-heat be obtained from fermenting tree-leaves and hot-water pipes combined, the drainage being ample and good, the roots will take more canure water than many gardeners apply, but it must be of a mild description, weak and varied, and 10° warmer than the soil of the bed. Water derived from tanks that catch the drainings of manure-heaps and hot-beds, forms an excellent manurial aid, and it may be varied with guano and soot-water for application at the roots and damping down; it should be applied in a weak state, perfectly clear. The materials used for top-dressing should consist of moderately light sandy turfy loam, with the finer particles taken out of it, coarse lime-suble and plenty of charcoal, the whole being left in a warm place ready for use. A top-dressing should be thin; and broken charcoal should be applied round the bases of the stems. If canker or mildew attack the plants, a little quicklime and sulphur may be rubbed into the parts affected, and sulphur in any form will prevent the mildew spreading; but prevention being better than cure, every part of the house, including the floor and glass, should be kept scrupulously clean, and not a particle of decaying matter be left lying on the bed. There should be a constant inlet of fresh air, not in the ordinary way by opening the top ventilators, but by admitting it near the ground-line, a little below the hot-water pipes. Direct syringing having been discontinued, atmospheric moisture, and at the same time a brisk bottom-heat, may be secured by the frequent turning and renovation of the bed, particularly if it is composed of gradually decaying Oak-leaves. Removing the leaves at this season is an operation that requires great care, especially in dealing with the old ones, the great secret being the avoidance of the slightest check at a time when the vitality of the plants is rather low. Old leaves upon plants which have been over-fed at the outset often look rasy, and seem to invite the introduction of the knife, but it is much the better way to leave them alone for a time than run the risk of bleeding, thereby weakening the plant. When the trellis is quite full, a leaf here and there may be removed; and space for the extension of the best laterals may be secured by pinching the points of weak growths on their first appearance. Some growers have a

few male blossoms, but no one thinks of securing seed at this time; therefore, the whole of them without detriment to the fruit, may be removed.

Orchard-house.—If the trees were disblinded and superfluous shoots removed as soon as the fruits were gathered, very little pruning will be necessary at this date. Still, they should be examined; strong shoots, in some instances, cut back to triple buds about 12 in. from their base, and others cut hard back in order to ensure young growths. The leaders, too, in the case of pyramidal trees, may need shortening, and always to triple buds. Weak laterals with only two wood-buds, one at the point, the other at the base, must be left intact—certainly, until the crop is set and shoots are pushing freely. An experienced person can shorten back each shoot to a nicety, but anyone who lacks the confidence that knowledge gives will do wisely to defer pruning altogether until there can no longer be any question as to the position of the wood-buds, one of which must be left at the point of each shoot.

THE KITCHEN GARDEN.

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

Cauliflowers.—Plants wintering under hand-lights or in common cold frames should have the lights removed, excepting when there is severe frost or snow. Stir the soil under the plants at weekly intervals, following this with a sprinkling of wood-ashes. Cauliflowers in pots must be guarded against lack of water at the root.

Garden Walks.—Now is a good time to put gravel walks in good order by turning or re-gravelling, or both, as may be deemed necessary. Sometimes it may be necessary to pass the old materials through a 1-inch meshed sieve, and to make use only of the rougher portion. After making sure that the drains are in good order, make the bottom level, and place a layer of the rough materials on it, finishing off with another layer of fresh gravel; level this with an iron rake, avoiding the collection of the largest stones in places. When the levelling is done, pass a heavy roller over the walk. If the walk can be left unrolled for a week, the gravel will bind much firmer if it be well saturated once or twice with water previously, using a large watering-can with the rose, before and after the roller has been over it. Two men should work the roller, while two or more afford the water. When paths newly gravelled are in use directly afterwards, the work should be carried out while the weather is dry. The central part of a path may be from 1 to 2 inches higher than the sides, according to its width; more than this is inconvenient for persons walking abreast. All binding gravel walks should be rolled every few weeks, whilst moist. Gravels which contain much sand never bind thoroughly, and are invariably unsatisfactory.

THE FLOWER GARDEN.

By T. H. STAFF, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Planting Roses.—Assuming that the beds and borders intended to be planted are prepared for planting, the work may be carried out forthwith; the ground is still in good order for planting, and will so remain till heavy rain or snow fall, in which event planting must cease. If the plants arrive from the nursery before the land is ready for them, or whilst it is wet and sticky, open the bundles of plants, and lay in the latter by the heels in trenches securely from frost, and plant when circumstances are favourable. In planting dwarfs, it is advisable to cover the union of Rose and stock about an inch with soil, and thus steady the plant in the ground, and induce roots to push from the Rose itself. Pruning should be left till the spring, but apply a light mulch forthwith to newly planted and to old Rose-beds. In some parts of the country it is advisable, and even necessary, to

afford protection against frost; and for such a purpose dry bracken or stable-litter may be used, removing it partially or wholly in mild weather; otherwise the plants may be induced to make growth, instead of resting. Spruce Fir boughs, bracken, and litter should be kept in readiness for use when required.

Early-flowering Chrysanthemums.—The plants should now be trimmed over, and the varieties of which cuttings are required lifted and placed in a cold frame, bedding them in leaf-soil. Any of these varieties which are not in bloom at this date may be lifted and potted, and brought into the greenhouse, where they will afford flowers fit for various decorative purposes. Early-flowering varieties worth growing are Queen of the Earlies, Golden Queen of the Earlies, Mme. Marie Massee, and the crimson form of that variety; A. E. Mauser, O. J. Quintus, Harvest Home, Mytchet White, Pride of Mytchet, and Rycroft Scarlet.

The Home Nursery and the Reserve Garden.—Cuttings of shrubs desired may now be propagated. Some of the more common garden shrubs and trees that may be struck from cuttings at this season are Ribes, Willow, Paulownia, Poplars, Philadelphus, Privet of all species and varieties, Laurels, Roses, Loniceras, Ivy, Lilacs, Cornus, Euonymus, Althea frutescens, &c. Cuttings will vary in length from 9 to 12 inches, according to the species. In the case of plants which are grown as standards, the lower buds on the cuttings should be removed, but those on the climbers and trailers should be retained. The cuttings, being of various sizes and lengths, should be placed in trenches made with an upright face, and from 6 to 9 inches deep, and the cuttings arranged at from 6 to 12 inches apart. A cutting should rest on firm soil, and the trench filled in firmly, road-grit or sand being first scattered along the base of the cuttings. Rose-cuttings, if not put in earlier, may be similarly treated; also Rose-stocks of the Dog Rose, Polyantha, and Manetti species.

Hinds on General Work.—The frosts during the past fortnight have ranged from 5° to 15°, and deciduous trees are being rapidly denuded of their leaves, and everything in the border that is not perfectly hardy is putting on its winter dress. The patches of white formed by plants of *Königia maritima* are still conspicuous in the herbaceous perennial borders. The litter constantly accumulating in the borders and on the lawns and walks must be raked and swept up frequently. The lawns must be rolled as often as the staff will allow.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flouden Road, Camberwell.

The East Indian-house.—Most of the *Afrides* having completed their growth, only sufficient water should be afforded as will keep the foliage plump, and the moisture in the atmosphere should also be reduced to the lowest point, especially towards night, and during cold or very sunless weather. When *Afrides* are kept fairly dry, a drop in the temperature of a few degrees will not harm them; although it is advisable to keep the temperature from much fluctuation during the winter, avoiding the use of much fire-heat in mild weather, and maintaining the proper degree of warmth during unfavourable weather. If these conditions are observed, the "spot" on the leaves will seldom occur, and progress will be satisfactory during the season of growth.

Saccolabium and Blipheostylis.—Where the gardener must grow these plants in a moist stove, the surfacing of sphagnum-moss should be removed. These genera having very thick leaves, the plants are enabled to exist without injury under dry conditions, and with but very little water at the root. When water has to be afforded, nothing should be allowed to remain on or about the roots that will prevent these from getting dry within a short period of time. *Saccolabium bellinum* should be placed in a light position at the warmer part

of the intermediate-house for the next few weeks, the plant being still in active growth.

Angræcums.—The miniature Angræcums, always interesting where they can be induced to grow satisfactorily, yield abundant blooms in their season. While most of them succeed under the moist conditions found in the warm intermediate house during the summer, they must be removed to a warmer house for the winter, and hung up near the roof in a light position. At the present date many of the plants are in active growth, and are in that state for the greater part of the year, so that while affording sufficient moisture at the root, care must be taken to prevent the materials remaining in a moistened condition for any length of time. The larger growing species being now at rest, require the same kind of treatment as inmates of the East Indian division—referred to in this note.

Dendrobiums.—Some of the early-flowering species of deciduous Dendrobiums are showing their flower-buds, and if the plants are to flower early a very small advance in temperature may be afforded; a high degree of warmth tending to the production of growth rather than flowers. In smoky and foggy neighbourhoods the entire section of early-flowering Dendrobies should be kept cool and quiet for the next five or six weeks, which will bring us to a season when the prospects of a crop of flowers of good quality will be much better than at this season.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Planting fruit bushes.—The planting of fruit bushes should proceed simultaneously with that of Apples and Pears. In gardens in which small fruits have quarters to themselves, a distance of 5 to 6 feet from bush to bush should be allowed, and for the first season or two some light intercropping may be allowed. In mixed fruit plantations the distance apart often has to be regulated according to that of the chief fruit-trees, but crowding together of the bushes should be avoided. Where space permits, Gooseberries and Black Currants should stand at 8 feet apart. The land should be deeply worked, and manure liberally applied at the bottom of the trenches.

Black Currants.—These prefer a moist soil, and where such a site is available it should be chosen for this fruit. In recent years the Currant bud-mite has caused much loss in some parts of the country, ruining the bushes and the crops. No real check has been discovered for this pest, but it has been demonstrated that when grown in isolated rows, with Gooseberries or some other crop between, the Black Currants may be grown more successfully than when planted in quantity by themselves. The varieties grown should include Lee's Prolific, Carter's Champion, and the Black Naples. Of Red Currants, Red Dutch, a good sweet common variety; Ruby Castle, a late dark red; La Fertile, or Fay's Prolific, large and fine, a good exhibition variety. White varieties: White Dutch, good and early; Transparent, large and handsome, good cropper.

Gooseberries.—Red varieties: Crown Bob, Whinham's Industry, for picking green; Warrington, the best flavoured; Bromonger, Rifleman, London, and Conquering Hero. White: Whitesmith, Freedom, Jemmy Lind, Eagle, and Langley Gage. Yellow: Golden Drop, Keepsake, Leveller, King, and Langley Beauty. Green: Greta Green, Glanton Green, Keepsake, Shiner, Green Gage, and Green Walnut. Gooseberries may be successfully grown as upright cordons or pillar plants, and do well on north walls or fences, in which position the fruits may be protected till late in the autumn, and when thus grown they form a useful addition to the bush fruits.

Raspberries usually occupying the same land for several years, it should be put into good heart before the plants are set out. It should therefore be trenched 2 or more spits in depth. Light soils should be heavily

dressed with rotten cow-manure, and those soils that are cold and clayey should receive a dressing of half-rotten stable-manure, crushed bones, and mortar-rubbish, these being incorporated with the staple in the process of trenching it. Planting may take place after some weeks. Various methods are adopted for planting Raspberries. A strained wire fence is one of the best means for securing the canes in private gardens. These fences are arranged about 6 feet apart, and the canes planted singly at 2 feet apart alongside. Two wires, the upper one about 5 feet high, will suffice; and these should be secured to iron or oaken standards, and strained tightly by means of *raisisseurs*, or nuts and screws. Another method of planting is in clumps of three or four at 4 feet apart in the rows, and secured to upright stakes, or collected into bundles of eight to twelve, half from one stool and half from the other, and bent over so as to form an arch, tying them together in several places, and securing them to a stake placed about the middle of the bow. One of the best varieties to plant is Superlative, the fruit of which is much in advance of others in size and in flavour, making it eligible for the dessert. This variety is also a prolific and perpetual bearer, and produces a few fruits well into the autumn from the lower laterals. Other good varieties are Baumforth's Seedling, Carter's Prolific, Fastoff, and Semper Fidelis, a bright coloured and sharp-flavoured variety, excellent for preserving, and which birds will not eat. Yellow fruited varieties are Antwerp, Magnum Bonum, Guinea, and Yellow Superlative; while October Red and Belle de Fontenay are good autumn bearing kinds.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PARK, ESQ.,
Prestwold Hall, Loughborough.

Lily of the Valley.—The finest variety for early forcing is that called the Berlin variety. As soon as these come to hand, pot them forthwith, never permitting them to get dry. If potting cannot be attended to just then, plunge the bundles of crowns temporarily in damp moss or soil. A pot 1½ inches in diameter is a useful size for Lily of the Valley, twelve to fourteen crowns being put into a pot, employing almost any kind of finely-sifted soil, and potting firmly and sufficiently deep, to leave the crown just visible at the surface of the soil. After potting, afford water to settle the soil, and plunge the pots to the rim in a bed of coal-ashes out-of-doors; it being thought necessary that the crowns should be "frost" before forcing them. My own experience teaches me that no difference is noticeable between frosted Lily of the Valley, and those that have been long exposed to the weather. From now onwards batches may be put into the forcing pit once a fortnight. Let the pots be plunged in a bed having a warmth of 80° to 85°, top heat of 68°, covered with cocoanut fibre or moss, and kept constantly moist till the flower-spikes are developed; then gradually accustom the plants to the light by removing some of the moss or Cocoanut-fibre, and ultimately place them upon a shelf in a house having a temperature of 65°. For decorative purposes, the root masses may be divided without injury, and placed in fancy bowls, and mossed over.

Spiræus. Pot up clumps on arrival into large 18" or small 12" s, according to the size of the clumps, using finely-sifted soil around them; put them in a cold frame plunged in tree-leaves, with a few of the latter over the crowns. They should be got into growth before they are forced in heat. The varieties which are liked the best are *S. astiloides floribunda*, *S. japonica*, and *S. compacta multiflora*. In forcing Spiræus, much water at the roots is needed, and much humidity in the air. Weak liquid manure-water may be applied when the flower-spikes are coming along.

Polygonatum and Diehlytra require similar treatment to Spiræus in potting and after

management. In order to make large specimens, several clumps should be placed together in large pots.

Freesias.—These bulbs may now be gently forced, if very early flowers are required. Let each growth be separately secured to a neat stake, this being a better method than placing three or four sticks around the edge, and a ring of raffia to support the growths.

Show Pelargoniums.—Those plants that were the earliest to be cut back, being advanced a little in growth, may be potted in the pots in which they will flower, that is 2½'s. Employ a compost consisting of turfy-loam three parts, leaf-soil one part, with sand; potting firmly. Place the plants on a bench or shelf near to the light in the greenhouse, and afford water sparingly during the winter, and only when absolutely necessary. Vapourise or fumigate the plants occasionally. Zonal varieties are now at their best, and notes should be made with a view of weeding out the least desirable varieties.

HERBACEOUS BORDER.

HELIANTHUS MOLLIS AND H. TOMENTOSUS.

A FEW weeks since, a very handsome Sunflower received an Award of Merit from the Royal Horticultural Society, under the name of *Helianthus mollis*. The plant has been known as *H. mollis*, but it would now appear that the correct name, according to Kew, is *H. tomentosus*; therefore, anyone desirous of adding the certificated *H. mollis* to their collections should make a point of asking for the kind to which the award was made, otherwise they may receive an inferior plant. This matter is more important than appears on the surface, as, apart from the two distinct forms named above, there is a very indifferently named plant also that is said to be *H. mollis*, but which does not agree with any authoritative description of that plant, and is not worth growing in company with the best of these two species. When the award was made, three hardy-plant firms were exhibiting cut blooms of the so-called *H. mollis*, and in two instances the plants were identical, and in the third a difference was remarked in the flower-heads, such as would arise in seedlings. The perplexing part is, that this last and the best form alluded to above bear distinct specific names, for the difference is slight indeed if we are to regard the plants as distinct species.

By the kindness of Mr. Amos Perry, Winchmore Hill, and Messrs. T. S. Ware, Ltd., Feltham, I am in receipt of ground plants of these Sunflowers for comparison and test purposes. A marked characteristic of *H. mollis* (Ware) and *H. tomentosus* (Perry) is the three-forked arrangement of the inflorescence as this emerges from the decidedly acuminate, obovate, perfoliate leaf that encompasses the flowering stem at its first inclination to branch, at nearly 2 ft. from the ground. In both, the involucre bracts constitute an ideal formation, while the root-stock and the mode of breaking from the soil are also identical. The only other difference, and it is indeed trifling, is that *H. tomentosus* is more pithy rather whiter than *H. mollis*; indeed, so nearly identical do these plants appear, that they may well pass as varieties of one species.

Those, however, who are desirous of adding one of the handsomest of perennial Sunflowers to their collection, should make a pointed reference to the plant that has been honoured by the Award of Merit this summer. The plant is about 5 ft. high, and apart from its chief characteristics of leaf and stem, the downy character of the tomentum is very striking. *E. H. Jenkins, Hampton Hill.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Nov. 26. Royal Horticultural Society: Committees meet.

THURSDAY, Nov. 28. Société Nationale d'Horticulture de France (Orchid Show).

SALES FOR THE WEEK.

EVERY DAY EXCEPT SATURDAY.—

Dutch Bulbs, at Protheroe & Morris' Rooms; Bulbs, Shrubs, Fosses, &c., Pollexfen & Co.

MONDAY, Nov. 25.—Cleanance Sale of Nursery Stock at Cockmannings Nurseries, St. Mary Cray, by Protheroe & Morris at 11.30.—Bulbs, Palms, &c., Stevens' Rooms; also at Johnson, Pritchard & Co., and Japan Lilies at 4 P.M.

WEDNESDAY, Nov. 27.—Japanese Lilies, Palm Seeds, Roses, Lily of the Valley Crowns, &c., at Protheroe & Morris' Rooms; also at Stevens' Rooms; Japan Lilies, same place, 2.30 P.M.

FRIDAY, Nov. 29.—Imported and Established Orchids at Protheroe & Morris' Rooms.
(For further particulars see *Advertisement columns*.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at SWICK —41.4.

ACTUAL TEMPERATURES.—

LONDON.—November 20 (6 P.M.): Max. 56°; Min. 51°.
November 21 (Full moon, rainy)

PROVINCES.—November 20 (6 P.M.): Max. 54°; Southern Counties; Min. 34°; Orkneys.

A CORRESPONDENT sends on a post-card a query which would demand a volume for a reply. He asks for some information concerning double flowers, perceiving rightly that several different conditions are included under that term. The loose nomenclature of gardens may be adequate for ordinary purposes, but when the natural inquisitiveness of the plant-lover comes into play the necessity for some less vague terminology begins to be felt. It is the aim of the scientific naturalist to secure that each distinctive word that he makes use of shall have one definite signification and one only. Of course, he does not fully succeed in this, for he cannot impose his will upon others whilst differences of application and variation in interpretation arise either from individual carelessness or from legitimate differences of opinion. In course of time also, owing to the advances of knowledge, things come to be looked at in a different light; new ideas gradually evolve, the old nomenclature becomes obsolete, and is supplanted by the new. This is not an unmixed blessing, for the new is often an improvement upon the old, and science becomes encumbered by a useless synonym.

Those who devote themselves to systematic botany consider themselves bound by the rules of priority; thus if a plant has been described and designated by a name, that name must be retained in perpetuity, and no one has the right to alter it, unless it can be shown to be, in substance, erroneous. Even then the change should not be made lightly, after the manner of some men, but only after the fullest consideration. In other departments of botany, physiological, anatomical,

chemical, a less strict adherence to priority is admissible, because new discoveries often entail new interpretations of old facts, and wider and clearer interpretations of familiar phenomena. Still, it is a great nuisance to one who has left the students' benches to take up a book and find a new terminology made use of in cases where it is not desirable or necessary. How often do we meet with neologisms which, when comprehended, are found to be merely new expressions for old facts?

In the field or in the herbarium the rule of priority is acknowledged and acted on more or less loyally; but in the laboratory, especially German ones, no such restrictions seem to be thought of—and so we have half a dozen different epithets for the same thing. This applies especially to the nomenclature of the tissues, but is not confined to microscopical anatomy. For instance, the familiar "stamens" and "pistils" are by some now called sporophylls, or sometimes micro-sporophylls and megalo-sporophylls respectively!

The new terms, it is true, denote facts and deductions from facts of extreme importance, which were formerly unthought of. But is it not preferable to continue to use an old term which commits the user to nothing in the way of explanation, and which in itself is a meaningless label, rather than adopt a new and cumbersome expression which may be out of date to-morrow?

The result is, that in this particular the scientific student becomes as loose in his use of terms as the gardener who makes no pretence, but who often adopts scientific methods in spite of himself!

Reverting to the subject of double flowers, we may begin by eliminating those which in a botanical sense are not double. This sweeps away all the so-called double Chrysanthemums, Asters, Daisies, Sunflowers—all the Composites, in fact, which owe their epithet "double" to conditions which are not the same as those to which the botanist applies the word "double."

Again, two or more Dahlias, or other flowers, by some accident, at or soon after birth, become united—or at least do not separate one from the other as they should do—and these the gardener calls double.

Another class of so-called double flowers occurs when a petal, instead of remaining single, divides or branches either radially (some Mallows) or collaterally (Primrose).

What, then, are double flowers? In a strict botanical sense, double flowers are those in which an additional number of petals is produced, either by actual increase of number, or by the substitution of petals for stamens or for carpels, or both (Rose Camellia, &c.).

It is quite possible that the causes which bring about these various kinds of double flowers are also diverse, and this being so, it may be of great practical importance to determine what they are. This brings us to what our correspondent wants to know. Unfortunately it is just here that the deficiencies in our knowledge are greatest. In some cases we say, and rightly, they are hereditary; but this explains nothing, it only implies that there was a time when the structure was different from what it has since become. What brought about the change, and why has it become fixed and hereditary?

Again, we say glibly—but, no doubt, with some truth—that these double flowers are the result of some differences in the conditions under which plants grow—to a difference in the "environment," as it is the fashion now to say. These changes bring about a corresponding alteration in the nutrition of the plant, and so on. All this is true enough, but it is not sufficient for practical purposes. We still want to know how and why. The difficulty of finding out is increased by the fact that we constantly find one plant out of many producing double flowers, or it may even be one flower out of several on the same branch, that is doubled, whilst all the others are normal, and yet the "environment" is, for aught we can see, unchanged.

Of late years the production of double flowers has been attributed to the action of mites or other insects, to fungi, and quite recently to the influence of nematode worms in the roots. It cannot be denied that such causes may be operative. All that we can say is, that although we are pretty familiar with double flowers in a wild and in a cultivated state, as also with the effects of injury from insects and fungi of various kinds, yet we have never seen any such morphological changes as are exhibited in "double" flowers as a result of parasitic injury. What we do find in such case are pathological deformities in which regularity of conformation is abolished, and more or less shapeless masses ensue, or, as in the case of galls, we find a regular adaptation to the requirements of the insect.

Speaking generally, then, we do not think the causes of the doubling of flowers are at all sufficiently understood. Morphology has done its part: it is now for the experimental physiologist to endeavour to ascertain and, if possible, to prove what are the causes which bring about doubling. The results to practical horticulture will eventually be commensurate in importance with the benefits conferred on vegetable physiology.

**** OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1902. 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.

HOHERIA POPULNEA (Supplementary Illustration).—We are indebted to Mr. BURROUGHS, of the Trinity College Botanic Garden, Dublin, for the opportunity of figuring this beautiful New Zealand shrub. It would probably prove hardy in southern England, and looks as if it might be utilised for forcing purposes. It is included in the Mallow family (Malvaceae), and is in its native country a small tree, "everywhere admired for its handsome foliage and the beauty of its pure white flowers, which are produced in vast profusion during the early winter months." So said the late Mr. KIRK in his very useful *Forest Flora of New Zealand*. In that work no fewer than five plates are devoted to this species, in order to illustrate the astonishing diversity in the form of the foliage. Our plant, it will be seen, is almost typical, corresponding nearly to the one figured on plate 53 of KIRK's work, which represents the "Hothere" of the natives, or the "Ribbon-wood" of the settlers. The bark is in layers, which may be used like that of the Lime in Europe, or for cordage. The

typical form, it appears, does not vary much in its foliage; but if it be cut back, the new shoots will produce leaves of different forms. The flowers do not show the same amount of variability, but are almost constant in all the varieties. The plant was figured in HOOKER'S *Tropics Plantarum*, t. 565, 566; see also J. D. HOOKER, *Handbook of the New Zealand Flora* (1867), p. 31.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees will be held on Tuesday, November 26, in the Drill Hall, Buckingham Gate, Westminster, 1 to 4 P.M. Instead of Prof. HENSLOW'S demonstration, a lecture will be given by Mr. J. E. AUSTIN, on "Fruit Preserving in relation to Fruit Culture." The lecturer will also exhibit a large number of specimens of bottled and otherwise preserved British fruits.

— At a general meeting of the Royal Horticultural Society held on Tuesday, Nov. 12, twenty-two new Fellows were elected, amongst them being Lady Lay; Sir ALFRED S. LETTBRIDGE, K.C.S.I.; Major M'RAE-GILSTRAP; E. EVANS-LOMBE, J.P., D.L.; G. H. PINCKARD, M.P.H.; making a total of 851 elected since the beginning of the present year.

— The vacant Victoria Medal of Honour has been conferred by the Council of the R.H.S. upon Mr. W. BATESON, M.A., F.R.S., of the University of Cambridge, for his study and investigations in Hybridity and Heredity.

M. LUCIEN LINDEN, who is about to retire from his post as Managing Director of the Coloniale Horticulture in order to devote himself the more closely to his famous Orchids at Moortbeek, has just been nominated Officer of the Order of Leopold.

A FLOODED NURSERY.—The extensive nurseries of Mr. W. TROUGHTON, at Walton-le-Dale, Preston, owing to the storms of Tuesday, November 12, were entirely flooded by the adjacent Darwen river, the water standing 7 feet deep in many of the greenhouses. Owing to the lie of the land, the flood receded very slowly, and was only eventually cleared by making a breach in the river-bank, and by the use of manual and steam fire-engines, kindly lent by Messrs. HOKKROCKS, CREWSON & Co. As might be anticipated in such a locality, the thick deposit left by the flood was of a most foul and fetid nature, which apart from other damage cannot fail to have a very detrimental effect upon the plants coated with it, and the soil which it pervades. The flood appears to have been locally increased by a mass of timber from a bridge in course of erection, blocking up the waterway. Mr. TROUGHTON estimates his loss at fully £1,000.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Reports reach us of a very successful concert held at Chertsey on the 14th inst., on behalf of the funds of this excellent charity. Mr. A. J. BROWN, of the School of Handicrafts, Chertsey, who on two previous occasions has promoted similar concerts, has thus shown his enthusiasm as a local secretary of the Institution.

STOCK-TAKING: OCTOBER.—Once again a decrease has to be reported on both imports and exports for the month of October—the former footing up £1,111,265, the latter £759,294. The imports for the past month were £11,351,403, against £18,495,608, for October, 1900. The principal decreases are to be found in cotton, grain, and timber; in the same category are cheese, unrefined sugar, some fruits and vegetables. On the increase side we find Barley, Oats, bacon, butter,

refined sugar, tea, and tobacco—this latter, perhaps with an eye to the next budget, possibly also caused by competition at home between English and American syndicates. It may be remembered that the imports of timber in October of last year were abnormally large. The following figures from the "summary" tables are to the point:—

IMPORTS	1900.	1901.	Difference.
	£	£	
Total value	48,495,608	41,351,403	-7,144,205
(A) Articles of food and drink & duty free	14,905,619	14,745,255	-160,364
(B) Articles of food & drink—dutiable	5,599,584	4,433,089	-1,166,495
Raw materials for textile manufactures	6,166,993	4,188,584	-1,978,409
Raw materials for sundry industries and manufactures	6,589,415	5,353,345	-1,236,070
(C) Miscellaneous articles	1,265,925	1,396,245	+130,320
(D) Parcel Post	89,240	81,457	-7,783

In sundry materials for textile manufactures there has been a falling off—the same remark applies also to various manufactured articles and sundry classes of raw materials—all of which denotes dullness of trade, due in great part to the uncertainty caused by the political outlook. The figures relating to the trade in fruit, roots, and vegetables are of general interest:—

IMPORTS	1900.	1901.	Difference
	Cwt.	Cwt.	
Fruits, raw	267,100	268,810	+1,710
Apples	368,158	298,810	-69,348
Approts and Peaches	821	239	-582
Bananas & Bananas	126,292	222,319	+96,027
Grapes	173,182	280,797	+107,615
Lemons	42,579	72,468	+29,889
Nuts, Almonds	35,496	27,494	-8,002
Others, use as food	129,728	176,510	+46,782
Oranges	42,279	98,896	+56,617
Pears	74,194	48,649	-25,545
Plums	9,444	987	-8,457
Unenumerated raw	36,316	16,729	-19,587
Fruits, dried	—	—	—
Currants, for home consumption	198,526	214,148	+15,622
Raisins	142,274	156,796	+14,522
Vegetables, raw	—	—	—
Onions	81,728	74,816	-6,912
Potatoes	965,754	153,815	-811,939
Tomatoes	69,961	37,490	-32,471
Vegetables, raw—enumerated value	418,598	413,789	-4,809

Bananas appear to be keeping the position they achieved on the first development of the new line of steamers to the West Indies; the import of currants and raisins will also be found of note. The value of the imports for the past ten months is placed at £128,715,972, against £127,616,786 for the same period in 1900—an increase of £1,099,186; a diminutive mercy. Coming now to the—

EXPORTS

for October, the result is about the same as recorded for October in last year, when the figures were placed at £24,712,930, against £23,983,636—a reduction this year of £729,294. The lowering of prices in coal and metals is accountable for much of the falling off, and it is curious to note a reduction of £219,000 on the export of herrings. Taking stock of trade reports in various Continental labour centres, it would appear that labour languishes there more than here; which is a poor consolation,

The value of the ten months' exports is placed at £233,312,676, against £213,211,685 for the corresponding period of last year—a decrease of £20,100,991. It is not likely that the tide will turn in the period remaining to complete the year 1901.

PRESENTATION TO F. W. MOORE, ESQ., M.R.I.A.—The Council of the Royal Horticultural Society of Ireland, at their monthly meeting held on Friday last, took the opportunity of presenting F. W. MOORE, Esq., M.R.I.A., with a very handsome canteen case of forks and knives, on the occasion of his approaching marriage. In the absence of the President, Mr. ROBERTSON presided, and in making the presentation expressed the pleasure it gave his colleagues on the Council to have such a fitting opportunity of conveying to Mr. MOORE their sincere appreciation of his indomitable zeal and unlagging energy in, from time to time, helping to further the object of the Society, and on behalf of the Council wished Mr. MOORE and his bride elect every happiness in their future state. Other members of the Council spoke to the same purpose, to which Mr. MOORE suitably replied.

THE BORDEAUX CHRYSANTHEMUM CONFERENCE.—Mr. HARMAN PAYNE was awarded the Silver-gilt Medal of the Société Française des Chrysanthemistes for a most interesting paper read at the Bordeaux Chrysanthemum Conference on the 8th inst. The subject of Mr. PAYNE'S paper was "The History of the Introduction of the Chrysanthemum into France and England."

THE DYSON'S LANE, MILLFIELD AND FOUNTAIN NURSERIES BENEFIT SOCIETY.—The ninth Annual Dinner, Mr. H. B. MAY in the Chair, was held at the Dyson's Lane Nurseries on Saturday, November 16, when a large number sat down to an excellent supper supplied by Messrs. SCHMIDT, of Enfield Town, after which a programme consisting of instrumental and vocal music was carried out to the enjoyment of everyone present. The proceedings closed with a speech from Mr. H. B. MAY, the President of the Society.

HERR MAX LEICHTLIN, Town Councillor of Baden-Baden, and corresponding member of the Society for the Advancement of Horticulture (Verein zur Beförderung des Gartenbaues), was, on the occasion of his seventieth birthday, October 21, presented with the Silver-gilt Medal with a suitable inscription. This is a Medal only presented as an acknowledgment of service done in furthering the aims of the Society by general advancement of horticulture. *Gartenflora*, November 1, 1901.

TOMATOS.—"Naturally," writes a correspondent to us from Guernsey, "we have an idea here that our Tomatos are under-rated. When we first started the cultivation of this fruit, we were content to grow very inferior varieties, and market them in a questionable condition. We were not experts at fruit-growing, but farmers. There was money in it in those days, however, for the taste for Tomatos went ahead of the supply. Now everything is altered. We are all experts; our methods of cultivation are advanced; our varieties up-to-date, our packing and marketing almost beyond reproach; our fruit of a very high quality; but there is not so much money in it. A Guernsycman sees more in the Tomato than most people. Our youngsters are born to it, and know a good bit about the plant long before they know their alphabet. They take to it as naturally as ducks take to water, for we are all Tomato-growers. No matter what trades we may have learnt, or in what

department of the labour market we started to earn our bread, we drifted into the growing, and, on the whole, we have been successful. Tinkers, tailors, quarrymen and sailors, merchants and builders, or picture-frame gilders, we all have our glasshouses filled with Tomatos. Many of our houses are 300 ft. long and 40 ft. wide, holding from 1,000 to 5,000 plants. From this number it is not unusual to pull seven or eight tons of fruit. As this only averages 3 lb. to 4 lb. per plant, it would appear as only a moderate crop to an English grower, but we do not set much value upon the average per plant; what we do value is the average weight, say, in a perch of ground, or, if we can take from this space, say, 10 cwt. of fruit, we are not on bad terms with ourselves." *Fruit Trade News*.

THE ELM-BEETLE (GALERUQUE).—M. A. MÉNÉGAUX has recently communicated to the Paris Académie des Sciences (*Comptes Rendus*, September 9), the results of his endeavours to cope with the Elm bark-beetle. The greatest success obtained by him was by the plan of spreading for the larvæ a bed of moss or of hay under the Elms, into which shelter they repair when about to become pupæ, when it can be at once burnt. Or fully-grown beetles can be destroyed after knocking them out of the branches in the morning and at sunset, and gathering them into spread-out sheets. By seeking their winter retreats, and raking up and burning dead leaves, the park or nursery is soon freed from the greater number of these pests.

SAINTPAULIA IONANTHA IN THE OPEN AIR.—M. ANDRÉ, in the *Revue Horticole* for Nov. 1, narrates how he grows this pretty little plant in pockets on his rockwork, with a northern aspect. The plant does well, and blooms the whole season. Each year it is renewed at little cost or difficulty.

CONTINUATION - SCHOOL GARDENS IN SURREY.—Eight years ago the Surrey County Council established a series of continuation-school gardens throughout the county with a view to teaching youths the best methods of cultivation, and inducing them to take practical interest in the work. Mr. J. WRIGHT, F.R.H.S., has just presented an exhaustive report on the work of the past year. He says that it would be difficult to find at home or abroad better filled and more productive cottage gardens and allotments than are to be found in Surrey. But the advance made by the youths in their gardens has in the aggregate been still greater, and the results have demonstrated that the produce of any kind of land that is at all amenable to improvement can at least be doubled in value by sound methods of cultivation. This assertion, he says, is substantiated by the actual results obtained in 1,682 plots of land cultivated systematically by youths from 11 to 18 years of age, working under instructions during a period of eight years. The value of every crop in these plots has been carefully ascertained and correctly recorded, and from these data it seems absolutely clear that the land has actually doubled in productivity. The average number of merit-marks in the first year of the experiment was 47; this year it is 90, and many of the workers have greatly exceeded this average. The Royal Horticultural Society has awarded one lad, HERBERT CÉSAR, of Hale, near Farnham, its silver Banksian medal in recognition of the best work that has ever been seen in a school garden-plot in Surrey or elsewhere, and he is the youngest silver medallist of the Society in England. Mr. WRIGHT adds that the money value of the

crops on three typical stations, after deducting £10 for manure, seeds, rent, &c., is shown as follows:—At Hale, which is on gravelly soil, the gain on the outlay in 1894 was at the rate of £14 per acre; this year it is £82. At Englefield Green (sand) there was a loss on outlay in 1895 of £2; this year there is a gain of £76. At Dorking (marl) the gain on outlay in 1895 was £2; this year it is £50. The labour of the youths has not been taken into account in these figures. *Times*.

SEEDLING PINUS AUSTRIACA.—The Earl of DICE writes:—"About three weeks ago a seedling plant of *Pinus austriaca*, 2 feet high, was discovered at Sarsden, near Clipping Norton, Oxon. It occurred in a covert consisting of a few Larch, some small groups of *Pinus austriaca*, low Thorn-bushes, rough grass, &c. The geological position: The lower beds of inferior oolite a few feet above the Upper Lias; the soil poor and stony. Situation: A valley facing south-east on a bleak hillside, at about 400 feet above sea-level; sheltered from all winds north-east to south. The plant has been verified at Kew as *P. austriaca*. There is, apparently, no record of *P. austriaca* reproducing itself in this country under natural conditions. Perhaps some of your readers may be able to cite instances of its self-sowing. I may add that in the covert referred to, some few cases of self-sown Larch have been noticed. *Duric, Tortworth Court, November 13, 1901.*"

THE PARIS PROFESSORSHIP OF HORTICULTURE.—Since the death of our late friend, M. MAXIME CORNU, no appointment of a successor has been made. It appears from an article in the *Jardin*, that the election is, in the first instance, in the hands of the Professors of the Museum. The claims of the various candidates are discussed by them with the assistance of the members of the Academy of Science. A list of the candidates, with the number of votes allotted to each, is then forwarded to the Minister of Public Instruction, who in his turn submits it to the President of the Republic, who, as a rule, selects the candidate who has obtained the highest number of votes. Among the candidates on this occasion is M. BOIS, whose qualifications are well known on this side of the Channel.

ANTIRRHINUM.—MR. JUSTUS CORDEROY sends us a spike of an *Antirrhinum* bearing what seems at first sight to be a large number of flower-buds. But the buds are destined never to attain the dignity of flowers. On examination they are seen to consist of green scales only without a trace of floral organs. The question, of course, at once arises: Now, why is this? But unfortunately we cannot give an answer. To say that it is something which disturbs the nutritive processes of the plant is to utter a truism but not to give an explanation.

PUBLICATIONS RECEIVED.—*Bulletin of Miscellaneous Information*, Botanical Department, Trinidad, October. Contents: *Onipaleia megacarpa*; Expedition of Dr. P. Peccorelli to Central and South America and the West Indies; *Phytoloma elasticum*; Death of Mr. Sutton; the "Sugar-cane"; Application of Manure to Trees in the Tropics, &c.—*Proceedings and Journal of the Agricultural Horticultural Society of India*, April to June, includes Notes on *Corypha* (illustrated), and *Anthurium*. A hint is given concerning the preservation of books in tropical climates.—"The covers of books in the Society's library are periodically wiped with a rag previously soaked in kerosene, and well wrung out, this in great measure preserved the books from the ravages of tiny grubs which infest the pages, while cockroaches were kept away from the covers."—From the Société Nationale d'Horticulture de France, *Commission des Engrais, de ses Travaux, Recherches spéciales de M. Georges Truffaut*—*Nature*, Nov. 8, November—*The Money-Lender's Act, 1900*: A year's experience of the measure; its failure to secure reform, and the need for an Amending Act, by Thomas Farrow

HOME CORRESPONDENCE.

FASCIAED LILY.—I wish to direct your attention to an anomalous form of growth of *Lilium auratum* observed by me on one of my friend's plants here in St. Petersburg. The bulb emitted five flower-spikes which were scented, forming one flat ribbon-like stem about 1½ in. broad. Each stem was faintly visible in the ribbon, which thus recalled to the mind a duck's foot with the webbing between the toes. The stem, 2 feet high, carried twenty-nine blooms of perfect form issuing distinctly from the five spikes, some on the edges, and the other on the broad side of the ribbon. The stem was only 2 feet high. The bulb had already flowered the previous year. I enquire if this anomaly is common or not? *Baron Stackelberg, Wasskresny Prospect, 17, St. Petersburg.* [Not uncommon, Ed.]

FRUITING OF CITRUS TRIFOLIATA.—As an instance of how well *Citrus trifoliata* thrives in the open border on the Sussex coast, I beg permission to mention that a bush of it I have grown here from a small plant without protection of any kind, has to-day thirty-two healthy Oranges on it of a pleasing yellow colour, although, of course, of no value as an edible fruit. *C. B. Leigh-Smith, Major-General, The Acacias, Worthing.*

THE POTATO CROPS.—The sturdy and healthy appearance of the haulm throughout the season, led growers to assume that the yield would be a good one, and indeed this has been more favourable than could have been expected, considering the coldness and wetness of the soil till quite the end of the month of May. The weight of tubers per acre is almost double that of the three preceding years, and the size and quality of the same are all that could be desired, with very few small or diseased Potatoes. I cultivate several varieties, and the heaviest croppers this season were Up-to-Date and King Noble. *Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

ASPECT OF A SPAN-ROOFED GLASSHOUSE.—I should be glad to ascertain the preponderance of expert opinion on this matter, i.e., the judgment arrived at by the actual experience of nurserymen and gardeners, and not mere theory. The theory used to be, I believe, that such a house should have its longer axis running east and west, so that the whole of one side may have the fullest exposure to the sun at noon. The objection to this position is, that an equal length is open to the north, and the distribution of sunlight at midday is unequal. Unless I am mistaken, it is largely the custom now to place span-roofs north and south, a situation which Mr. T. F. Rivers, writing in 1889, considered essential for a properly-planned orchard-house—"To ensure a certain and profitable crop the trees should be grown in a span-roofed house running north and south, so that the sun shines on both sides." In any discussion, it should be taken for granted that the site is open on all sides, and that the fruit or flowers to be grown are such as benefit from a maximum of sunlight. *G. H. Engleheart.*

BOTANICAL SPECIMENS.—Like Mr. Mott ("A Midland Garden," p. 286), I know Heer Buysman's botanical specimens, and can quite confirm what he says about them. Much as one prefers the living plants, it is often useful and always interesting to be able to refer to good specimens of plants in various stages of growth. Few of us have either the leisure or the skill to prepare good specimens, and Heer Buysman's certainly come under that term, and are very useful for anyone making a study of any particular genus. I recently received some specimens of species of *Solidago*, beautifully done, and apparently correctly named—though that is a difficult thing to say of *Solidagos*. *S. Arnott.*

TREES AND SHRUBS IN THE WEST OF SCOTLAND.—As one who knows a little about the West of Scotland and its capabilities, you

will, perhaps, permit me to draw attention to the remarks of your representative, "P." in the course of his fourth instalment of "A visit to the North," where he says (p. 326), in speaking of the small demand from nurseries for anything but shrubs and trees of but the commonest and hardiest character, "I think that gardeners in the district are too timid in trying to extend the number of species grown." It is too true that this is the case, and it makes one rather sad to see the sameness which often prevails in places where the newer trees and shrubs might be introduced with advantage. I think, however, that this largely arises from the few opportunities northern gardeners have of seeing these things compared with their brethren in the south, where these trees and shrubs are so often brought before the public through the medium of the shows. In the places where one meets with the rarer subjects it is often found that their introduction is due to the employer having seen them somewhere in the south, and the greater number of these rarer things have been brought in other than Scottish nurseries. From what

a yearly thing to produce cones, if in good health, as it retains its leaves for a longish period, two years sometimes. Is there male and female of it? Which might it probably be, male or female? I have another one, 9 or 10 inches high, very smooth in the stem, and showing a new growth, but something like the sloth in its movements. But still, patience is a great thing, and I am waiting for its development. J. C.

THE BACK PSEUDO-BULBS OF ORCHIDS.—What is their proper function? certainly not to remain and drain the vitality from the young growths, and generally to weaken the constitution of the plant. Why, therefore, should they be left on the plant, providing they serve no good purpose? Mr. Johnson, in his article on "Back-bulbs of Orchids," in the issue of November 2, is the first grower who has said that there is any risk in removing the back pseudo-bulb, providing there are, as Mr. O'Brien remarks in his article on "Orchid Propagation," in the *Gardeners' Chronicle*, October 19, two or three pseudo-bulbs im-

but hung up, as Mr. O'Brien says, in a fairly warm, dry house. I do not mean over the pipes, or near the heating apparatus, but in some place where the air is clear and sweet, and the temperature not lower than 55° at any time, rising in genial weather to about 70° for the back-bulbs of Cattleyas and Laelias, and the hybrids of both. Then they will require no water at all till the young growth is pushing, when I would advise a syringing once daily, in order to soften the scaly shields over the eye; when the young roots begin to appear it is quite soon enough to pot them. Very small pans and a very small quantity of compost should be employed, scarcely any water being applied till the roots have fairly taken to the compost. There is a case in point here this season. The two back pseudo-bulbs on a plant of *Laelia purpurata* (Larlyana turned of a yellow tinge, and shrivelled. I cut them off, and no eye of any description could be discovered, yet there is now a young growth pushing out from the section of rhizome between the two pseudo-bulbs. This appeared to be an instance of a hopeless case, and I mention it to prove that so long as there is life in the removed part, growth may be produced. W. P. Bound, Gatton Park.

(To be continued.)

APPLEY TOWERS AND LADY HUTT GRAPES.

—Referring to Mr. H. W. Ward's enquiry in the *Gard. Chron.*, Nov. 9, p. 311, whether there were any white-fruited Vines growing in the viney where the cross between Alicante and Gros Colmar took place? it will interest him to be informed that there were no such Vines in Appley Towers Gardens at that time, excepting a viney of Muscat of Alexandria, which was part of the same range, but separated by an early viney 30 ft. in length. The Muscats had passed the flowering stage, and the bunches were being thinned at the time the cross was effected, which took place in the late viney—at that time filled with Black Alicante, Gros Colmar, and Lady Downes Vines. T. D. Myles, Wheatthampstead, Hert's.



FIG. 111.—WISTARIA IN BLOOM ON A WALL AT WINDY PARK.

I know of gardens along the West Coast, I believe that many might with great advantage take the remark of "P." to heart, and seek for some new shrubs or trees. Mr. Melville, the gardener at Poltalloch, gave a very interesting and useful paper on the subject to the Scottish Horticultural Association two or three years ago, which was published in the *Proceedings*. Then, further north, Mr. Osmond Mackenzie has shown what the west coast of Ross-shire can do. Mr. Coulson has, down the Clyde, been gradually getting together a collection of choice things, and in other places further from the coast one sees reputedly tender things do well. S. Arnott.

STANGERIA PARADOXA. I have a plant of this species between thirty and forty years old, but it is very slow growing; it has one leaf now from the crown (and one from the crown under the soil, a much smaller one), and it is now showing a cone, which it has frequently done before, having had four or five old ones on it at a time. As they were not easy to remove, they were left. It has within the last seven or eight years made two crowns, but only one with a leaf yet, but it looks very much like growing but Oh! how slow. It has not been re-potted for, I should think, thirty years. I was offered 75 francs for it as long ago, perhaps. It is 6 inches high, or more. The leaf generally produces about twelve pairs of leaflets. I do not know if it is

mediately behind the lead. We know what the general result has been for the past twenty years with the thousands of Orchids which have been imported during that period. I venture to observe that not 10 per cent. are alive and in good health to-day. Why? In the majority of cases they have been coddled and denied fresh air, and the old pseudo-bulbs have been allowed to remain, to deprive the young growths of their proper amount of support. Perhaps I have rather left the point at issue; but I am convinced of the desirability of taking away the old back pseudo-bulbs, whether they are required for propagation or not. Take for instance a propagated *Dendrobium*; we get from the first young pseudo-bulb about an inch in length, a fine pseudo-bulb very often from 6 to 10 inches in length; and in this case the whole of the young roots go to support the young growth, and not to feed bulbs already made. I think this is quite sufficient to show that the more old pseudo-bulbs the plant has, the weaker will be the growth. No doubt someone will argue that they have plants that make fine pseudo-bulbs each year, and still have a large number of old ones; but I contend that if they take away the robber behind, they will have still finer pseudo-bulbs and better flowers. My experience goes to prove that when the back pseudo-bulbs are cut away, if the variety is worthy of propagation, and no eye of any description is visible, they should not be thrown away,

WISTARIA SINENSIS.

This magnificent climber, when satisfactorily grown and flowered, is appreciated in the gardens of peer or peasant. Owing, no doubt, to the favourable spring for the growth and development of its beautiful racemes, the cultivator of this charming climber was amply recompensed last season with a profusion of racemes from early May until well into June, as the accompanying illustration (fig. 111) will testify.

Of the other species of the *Wistaria* in cultivation, none has given the cultivator the satisfaction that the common *Wistaria sinensis* has done. Although *W. macrobotrys*, with its beautiful, large racemes, is of great beauty, it is less hardy than the common one.

Another species of great beauty is *W. multi-juga*, from Japan, which resembles *W. sinensis* in its pale purple flowers, which are often borne in racemes from 1½ to 2 feet long. This variety is also known under the name of *W. grandiflora*.

I recollect seeing *W. sinensis* growing and flowering most luxuriantly in the flower garden at Dulton (Archerfield), East Lothian; also at Newbattle Abbey, Mid Lothian. In the west of Scotland, its cultivation is not always a success, as I have seen it make from 6 to 8 ft. of growth during the season, but owing to the wood not being properly matured during the autumn, it could not withstand the winter, and had to be cut back each spring to the old stump, as is generally practised with *Erythrina cristagalli*.

On garden walls, mansions, and cottages, where space can be allotted for the planting of *Wistaria sinensis*, I should strongly advocate devoting the space to this most elegant

climber; and should the climate and soil be suitable to its growth, it is marvellous the amount of wall it will cover in the course of a few years. When once established, it will make as much as from 12 to 15 feet of growth in one season. An unsightly wall, or any other unsightly structure, can thus be clothed with a climber of the choicest kind in a few years. *George Mackinlay, Wrest Park Gardens, Amphill, Beds.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 12.—*President:* Dr. M. T. Masters, F.R.S. (in the Chair); *Messrs.:* Odell, Chapman, Saunders, Bowles, and Michael. *Drs. Rendle and Cooke;* Revs. W. Wilks and G. Henslow, Hon. Sec.

Stellate Coccid.—With reference to the specimens brought by Mr. CHAPMAN to the last meeting, Mr. ROBT. NEWSTEAD reports as follows:—"The Coccid on *CYPripedium* is the *Vinosa stellifera*, Westwood, 'The Star Scale.' It is known from both hemispheres, but has been found most abundantly in the West Indies. The specimen sent was a male parium, and one contains an imago ready to emerge. They are both new to science." Mr. Chapman added that the species of Orchid was *C. Godefroey var. leucociliatum*. It was imported some six months ago, but the exact locality was not known. Dr. Masters suggested Cochinchina as being the native country of that species of Orchid.

Worms in soil.—Dr. SAUNDERS reported as follows upon specimens sent to the last meeting by Mr. Baker, of Henbury, Bristol:—"As regards the worms sent by Mr. Baker, of Henbury, I hear from Mr. F. E. Beddard, our best authority on these animals, that they are not young earthworms. He says the worms you sent me are members of the family Enchytraeidae, not earthworms in the strict sense. I think that they do injure living plants—at least, some of the many species of the family do. I am not certain what particular species it is that you have sent me. To identify them is rather a troublesome task, because of the numbers that are known and the slightness of the characters that sometimes distinguish them. I have written to Mr. Baker, and recommended him to water thoroughly with lime-water, or a solution of 1 oz. of corrosive sublimate and 10 gallons of water, to turn up the soil well so that the birds might get at them, and to turn poultry in if practicable."

Fern fronds.—Dr. M. C. COOKE reported upon specimens sent to the last meeting:—"The two Fern fronds were examined, and the spots, like those caused by rain drip, showed no sign of fungus or mycelium, and I am convinced that the cause must be sought in the surroundings."

Vine leaf.—Dr. COOKE also reports as follows:—"Two objects on the leaf attracted my attention. The one was represented by small, black, superficial spots, which were something like grains of gunpowder in appearance. They had no adhesion to the leaf, were quite amorphous under the microscope, and probably were only insect frass." The other object consisted of small, discoloured spots about half-an-inch in diameter, and of a dingy olive colour. On attempting to remove a portion on the point of a pen-knife it flaked off in pieces, and left the leaf beneath quite green and uninjured. It could all be wiped from the leaf, as there was no attachment. The object proved to be a network of brown mycelium, with the slender threads and spores of a species of delicate Cladosporium. As it was wholly superficial, I did not attempt its specific determination, since it could not inflict injury on the vine, and could be readily wiped away." The thanks of the Committee were given to Dr. COOKE for these investigations.

Club-root fungus-like.—Rev. W. WILKS inquired, on behalf of a correspondent, whether lime cures this disease, as some farmers consider its prevalence to be due to a want of lime in the soil.

Mr. ODELL said that gas-lime was effective, as it is also for wireworm, but doubted the value of lime itself.

Dr. MASTERS observed that Wallflowers which grow on chalk are very liable to the disease, and attributed the destruction of the fungus to the sulphur in the gas-lime, and not to the lime itself.

Effects of London Fog upon Orchids.—Mr. CHAPMAN brought specimens of the flowers of *Cypripedium* insignis, a hardy mountain species, which was quite unimpaired. In the case of *Odontoglossum*, he scarcely lost a plant in bud, whereas warmer sorts of *Cypripedium* had their flowers limp, and collapsed.

Galls.—Dr. M. C. COOKE exhibited specimens of two kinds of galls: one from Oaks, and a second from certain members of the Anacardiaceae.

Carnations diseased.—Mr. Douglas sent some plants, which were referred to Dr. Cooke for examination and report.

Narcissus Bulbs Decaying.—Some bulbs were received, apparently attacked by some grub at the apex. Mr. SAUNDERS undertook to examine them.

Maple Branches Coked.—Mr. DICKS exhibited a forking Maple-branch, which another had apparently pierced. It was suggested that the latter had been caught in the fork, and by growth had split the main stem below it, then this had healed up all over the shoot. The position of the inserted bough was rather below that of the other two, which formed the angle between them. Rev. W. Wilks said that he knew of a very similar occurrence in an Oak-tree, but the bough was a very large one in that case.

Apple Spotted.—Dr. MASTERS exhibited an Apple covered with black spots. Dr. Cooke observed that they were the early stage of a fungus, *Labrella pomi*.

Stemium japonica.—Dr. MASTERS showed a fruiting spray of this plant.

Brook Leaves with Galls.—Mr. ODELL showed leaves with galls of a small gnat-like fly, *Hormomyia piligera*, one of the Cecidomyiidae. A peculiarity in the autumnal colouring of the leaves was, that while all the rest of the blade was orange coloured, the portion near the galls, or the upper half of the leaf beyond them, was still bright green. This retention of the chlorophyll was apparently due to the stimulus produced by the local irritation set up by the presence of the galls.

Plants from Botanical Gardens, Cambridge.—Mr. R. THOMAS LYXCH sent the following for exhibition:—*Gerbera*, a new var., "Sir Michael" (*Gardeners' Chronicle*, September 21, 1901, p. 223). The disc florets are peculiar in having two thread-like petals on one side, and three longer ones on the other. It may be noticed that this condition sometimes occurs in the transitional state of disc florets in semi-double *Baileas*, &c. *Plectranthus sacraeus*, a new introduction to Cambridge, the flower being exceptionally large for the genus; it was received from the Cape. *Lotus glaucus*, Ait. (referred to in *Journal of Botany*, 1807, p. 382). *Panicum canariense*. *Lindenbergia grandiflora*, introduced to Cambridge 1800 (*Bot. Mag.*, 1800, t. 778). Nat. Ord. Scrophulariaceae. The genus embraces eight species—E. Africa, Arabia, India, and Malay Arch. The present species has yellow flowers, resembling those of *Mimulus*, but is devoid of the two sensitive stigmatic lobes, the stigma being globular.

Plants from Botanical Gardens, Trinity College, Dublin.—Mr. F. W. BURDE-NE sent the following for exhibition:—*Colletia Benthamiana*, a plant of dwarfed and finer growth than *C. ferax*; it bore three leaves upon the spines. *Rubus australis*, in three forms, viz., var. *foliosa*, with large leaflets; var. *intermedia*, with very small ones; and the ordinary form, with none at all. Natives of New Zealand. *Apera arundinaria*, Hook., the "Pheasant-tail" Grass of the island New Zealand; the autumn tints of red and brown are very pronounced (*Gard. Chron.*, vol. xxii., October 23, 1897, p. 283, fig. 41). *Hypoxis hemerocallidea* (= *H. elata*, *Bot. Mag.*). A point to be observed is the circumscissile dehiscence of the ovary. It has been grown in the open at Dublin for seven years. *Narcissus tazetta*, a variety always blossoming in November and December in the open air, but near a warm plant-house. It is remarkable for the great length of stem and foliage. *Laurelia aromatica*, the "Chilian Sweet Bay." The leaves are highly aromatic if bruised. It makes an open air shrub at Wicklow 25 feet high, and is useful as a pot or tub plant in a conservatory. The genus has only two species—one in Chili, the other in New Zealand, indicating with *Fuchsia* a former connection between these places; it belongs to the order Monimiaceae. *Azolla filiculoides* has lived for years in muddy tanks; if introduced in a pond it is difficult to eradicate, from its hardy nature and great powers of multiplication. *Acacia melanosylon* (?), showing compound blades upon several of the phyllodes, an unusual feature in Australian species. *Parochetus communis*, "Indian Shamrock," remarkable for the perfectly straight peduncles, which become strongly bent in fruit, as if to bury the legumes like *Arabis*.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

NOVEMBER 4.—The usual fortnightly meeting was held on the above date. Mr. PERCY F. BUNYARD in the Chair. The evening was devoted to questions and discussion on November fruits and flowers, outdoor Grapes, and the summer-pruning and root-pruning of fruit-trees.

The Chairman remarked upon the Grape-vine covering the walls of Mr. W. Wells' house at Earlwood, and at the request of several members, Mr. Wells gave a very interesting history of it, also of the excellent wine that is made from the fruit, proving what can be done with hardy Grapes in this country.

The pruning of fruit-trees having been next dealt with, the grand stands of *Chrysanthemums* on the tables, exhibited by Mr. W. Wells and others, suggested a discussion on the queen of autumn flowers, its cultivation, usefulness, and beauty; its diseases, and some hints on remedies for the rust were made.

The next meeting will be held on Tuesday evening, November 19, when a paper will be given by Mr. J. F. Meland, gr., Iwer House, Kochampton, entitled, "Notes on the Cultivation of Mahonia Carnations." J. G.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

NOVEMBER 4.—By arrangement with the authorities of the Reading College, a lecture was given by Mr. Douglas A. Gilchrist, B.Sc. Edin. (Director of the Agricultural Department), in the lecture hall of the College, on "Soils and Manures." Unfortunately a fog prevailed, and prevented many members from attending. Mr. Leonard G. Sutton, the President of the Association, presided. Mr. Gilchrist, in introducing his subject, said that he wished to bring before them two particular points:—First, the supply of water to soils; and secondly, the most economical way of manuring soils. The lecturer explained in an interesting manner the different classes of soils in the Reading district, their formation, and cropping value; passing on to water in soils, the means of retaining moisture in soils, and finally referred to manures. The lecture was well followed on account of the diagrams and maps placed before the audience, many of which had been specially made for the meeting.

WARGRAVE GARDENERS.

NOVEMBER 6.—At a meeting held on the above date, Mr. F. HARTSON, Orchid grower to Sir John Edwards-Moss, Bart., of Thamesfield, read a paper on "Orchids and their Culture." A great deal of information was given on the proper treatment of freshly-imported plants, besides hints on temperatures, syringing, shading, watering, propagating, and general cultivation of *Cattleyas*, *Cymbidiums*, *Cypripediums*, *Lachas*, *Odontoglossums*, *Dendrobiums*, &c. Orchid pests were described, and the best means of eradicating them explained.

HANLEY CHRYSANTHEMUM.

NOVEMBER 6.—The Hanley Chrysanthemum Show has become one of the best patronised exhibitions of its kind in the Midlands. The exhibition was incontestably the best yet seen. The entries were more numerous, the quality in many classes of a high standard, and one or two features were sufficiently novel and interesting to ensure popularity. The Chrysanthemum blooms and plants were excellent. The feature of them is the level excellence of the display of cut blooms, Japanese and incurved, in the professional classes, and the improved character of the flowers by amateurs. The groups displayed for effect were good, and the banks of Chrysanthemums attractive. Very general admiration has been caused in previous years by the display of crosses and wreaths, and the florists this year did their best to earn even greater admiration. Messrs. JENKINSON & SONS, Newcastle; Messrs. KIRK & SONS, of Eaton Chapel, Manchester; and Mr. LEWIS, of Bedford Place, Hanley, among others, exhibited wreaths and crosses made up with excellent taste. Mr. J. KENT had made the orchestra look quite gay with a large number of greenhouse and flowering plants tastefully arranged.

The following is a list of some of the prize-winners:—Mr. J. MADDOCK, The Cedars, Alsager gr., Mr. B. SMITH, Mr. W. BOWLES, Carverston, Cheshire gr., Mr. W. G. GILBERT, Mr. J. McPHAIL, of the Queen's Park, Langton; Mr. J. C. WATERHOUSE, Collar House, Prestbury gr., Mr. A. H. HALL; Mr. F. A. BRAD, Doveridge Hall gr., Mr. George Wadson; Mrs. ACRES, Moreton Hall gr., Mr. W. C. BREEZE; The Duke of SUTHERLAND, Trentham Hall Gardens gr., Mr. P. BLAIR; and Messrs. M. JENKINSON & SONS, Newcastle.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 7.—On this occasion M. A. A. PEETERS, Brussels, exhibited a fine plant of Cattleya x Hardyana var. alba, having white sepals and petals, the labellum being similar to that of an ordinary variety. This plant was much admired, and received a F.C.C., and an additional award of a Silver Medal.

Capt. C. C. HICKEY, Hinkley, exhibited a good variety of Cattleya x His, named "Alba," which differs from the plant recently shown in London, having distinct eyes, as in C. gigas. The plant received a F.C.C.

E. ROBINSON, Esq., Didsbury, exhibited a fine plant of Cypripedium insigne, Harfield Hall var., of a golden hue, which imparted to the flower an interesting character. The colour, as was suggested, may have been due to the age of the flower. A plant of Lycaste has been named from the same exhibitor. It is apparently a natural hybrid with L. Skinneri x plani, and shows the characteristics of each Award of Merit.

S. GRATHGIE, Esq., Whalley Range, staged a few good plants, amongst them being a fine form of Cypripedium insigne var. Sanderianum, called "giganteum."

T. STAEGER, Esq., Whitefield, exhibited a very fine variety of Cypripedium neumannii. An Award of Merit was awarded to E. ROBINSON, Esq., for a group of plants, Bronze Medals to Mr. W. B. HOBSON, for a well grown collection of Cattleya Borinquiana, and to Mr. A. J. KEELING, for a group of Cypripediums. P. W.

ROYAL HORTICULTURAL OF IRELAND.

NOVEMBER 7. This show was held in the Central Hall of the Royal Dublin Society, on Wednesday and Thursday, the 6th and 7th inst., and was well patronised by the public on both days. Groups were not much in evidence, but cut blooms, fruit, and vegetables were abundant, and keenly contested, and the stands of the nurserymen made a brilliant display.

PLANTS IN POT.

For a group of Chrysanthemums, exhibited for the Ardham Prize, not to exceed thirty pots, staged for effect, Pinks or other foliage plants being used, Mrs. McCANN, Simmons Court Castle, Dennybrook gr., Mr. T. Goff, was 1st. The group was tastefully arranged, the Chrysanthemums being models of cultural skill, and there were many novelties.

For a group of Chrysanthemums, arranged for effect, not more than thirty six pots, for Lord Ardham's Challenge Cup, value £10, to be won three times before becoming the property of the winner, 1st, F. MILLER, Esq., Bagginbally House, Sandymount gr., Mr. P. Geoghegan, and as he has taken the premier place for the past three seasons, the cup is won outright. The plants of which the group consisted were heavily fruited.

For three plants of Chrysanthemums, Mr. J. Cavanagh, gr. to R. W. BOOTH, Esq., Victoria House, Dalkey, was 1st, the plants being giant specimens, with numerous blooms. Mrs. McCANN was 2nd with smaller plants.

Twelve Cyclamens, 1st, Mr. Samuel Davis, gr. to Mrs. Ginnahy, Oshlack Park, Blackrock, who took Lord Ardham's Challenge Cup, and a good money prize. The plants were superb, and the same exhibitor was 1st for Codonums, Dacrydiums, and Aroids, in the class for six table plants; Mr. A. Porter, gr. to Lord Ashurst, Co. Galway, was 2nd.

For the six pots of Tree Carnations, Souvenir de la Malmaison varieties offered, 1st, Mr. J. Toner, gr. to Mrs. T. WANA KELLY, Lower Leeson Street, with Mrs. Carson, Wynne Street, Countess of Warwick, and Madame Therèse Franco.

CUT BLOOMS.

For thirty-six blooms of Japanese Chrysanthemums, distinct varieties, Mr. Mitchellson, gr. to Colonel the Hon. C. F. CHURTON, Mullaboden, Ballymore East-estate, was 1st, taking the society's Silver Medal, and a money prize. The best of the more modern varieties were included in the stand; Mr. A. PORTER was 2nd, with moderately good flower boxes.

Twelve vases of cut blooms of Chrysanthemums, in as many varieties, three blooms of each, stems not to be less than 12 inches above the top of the vase, foliage other than that of Chrysanthemum excluded. The competition in this class was not keen, and the 1st prize fell to Mr. Porter, Lord Ashurst's gardener, with an even lot of well-formed, not excessively large flowers, taking the Waterhouse Challenge Cup and a money prize. Mr. J. O'Donnor, gr. to A. PIM, Esq., Bellevue, Blackrock, was 2nd.

Twenty four Japanese, in as many distinct varieties. Mr. Mitchellson again led with a good boxful, and Mr.

Bradshaw, gr. to the Marquis of Downshire, Hillsboro', Co. Down, was 2nd, with a good boxful of blooms.

Twelve Japanese blooms, in as many varieties. Mr. T. McDonald, gr. to J. TRAHAN, Esq., Greenhills, Frogheda, was 1st, with a choice boxful, and Mr. BRADSHAW was 2nd.

Twelve blooms, in the least six varieties, brought a close contest, it being open to exhibitors who had not won a prize in any previous Chrysanthemum competition. The best twelve were those shown by Mr. P. HARTY, gr. to Mr. MATHIAS TUCKER, Mountrose, Bonyngrove, Mr. J. FARMACH, gr. to R. W. BOOTH, Esq., Dalkey, was 2nd, with a fine box, his bloom of Madame Constant Henry was by far the best bloom exhibited.

Twelve mixed, distinct 1st, Mr. Webster, gr. to Lord PUCKER, Old Comanagh House, Bunc., with medium-sized, well formed blooms. Mr. M. KELLY, gr. to G. C. ASHTON, Esq., St. George's, Killybeg, Co. Down, being 2nd with smaller blooms.

For twelve blooms of Carnations—trees, Malmaison excluded, prizes presented by Lord Ardham, Mr. Rigg, gr. to Lord CURRY, was 1st, with superb blooms of Belle Silliman, Cardinal Walsey, Princesse de Monaco, Mrs. Lowley, &c., whilst the stand had two seedlings of his own flaked varieties, white ground, the flowers being streaked just midway with a purplish rose line. Mr. J. Toner, gr. to Mrs. T. WANA KELLY, was 2nd, with smaller blooms.

FRUIT.

For four bunches of grapes, two varieties, Mr. A. PORTER was 1st, with bunches of middle size of Muscat d'Alexandria and Black Alicante, and Mr. BOYDRAW was 2nd.

Prizes were awarded for dessert Pears, a twelve dishes, distinct, to Mr. R. McKENNA, gr. to Charles Wood, Finghinish, 1st, for very choice samples, and J. J. PIM, Esq., gr. to Mr. W. Long, 2nd, with smaller, but well flavoured fruit.

For a similar number of dishes of Apples, dessert and culinary varieties, Mr. J. P. BRADSHAW was on easy 1st, and Mr. HARTY, gr. to W. G. PIM, Esq., about 1st, and 2nd, respectively.

VEGETABLES.

For an exhibit of six of the twelve distinct kinds, Mr. W. STEWART, gr. to Mrs. E. ROBINSON, was 1st, with a fine lot, and Mr. A. PORTER 2nd, with an almost equally good collection.

MISCELLANEOUS EXHIBITS.

Messrs. MACKENZIE & SONS, Ltd., had a magnificent stand of cut and vegetable backed with foliage, and interspersed with large plants. Upwards of fifty varieties of Potatoes were shown whilst four or five good trees of the standard variety.

Messrs. WATSON & SONS, a florist, had a pleasing display of autumnal Chrysanthemums, comprising many of the newest varieties.

Messrs. ALVA JACKSON & SONS, Belfast, staged a capital lot of fruit, in about two hundred of boxes, also some fine Grapes. The lot included a quantity of Cufers and ornamented plants.

Messrs. CHARLES RAMSAY & SONS had an excellent lot of flowers, composed of Cocks, roses, ranunculus, Gladioli, Foxgloves, and Pentstemons, and a good lot of floral designs.

Messrs. RIVERS & SONS, Sandwick, with Heats, through their agents, Messrs. Edmundson, Done Street, exhibited a grand stand of fruit, containing many Pears of their raising, the specimens being very fine.

Messrs. ISSA, Hortist, Bristol, staged Violets in great variety.

Messrs. McKENZIE & SONS, Bunsick Street, had a fine array of large specimens of Apples and Pears.

Messrs. TAIT & Co., Chapel Street, had a goodly collection of fruit.

An interesting feature was the competition in trunk-packing, inaugurated by the Royal Dublin Society, for one barrel of dessert Apples, and one barrel of culinary Apples, to be packed by the exhibitor, to those in which American Apples come over to this country. The fruit must belong to and be grown by exhibitor. In this class competition was keen, and Mr. Robert McKenna, gr. to Lady EMILY BRYAN, was awarded the 1st prize. In the culinary class, Messrs. MAREY and LEWIS BRANISH, Esq., Cork, were equally placed, the mode of packing favoured being the one introduced by Californian growers, namely, each fruit wrapped in a separate piece of paper. J. O'Neil.

POTTERS BAR HORTICULTURAL.

NOVEMBER 7. The second show of this young society was held in the Village Hall, Potters Bar, on the date given above. The society is making good progress, and green support from the cottagers and residents of the district, promises to take its place worthily among the extra urban societies. The competitions in the vegetable classes were well supported, and the productions shown very meritorious. Chrysanthemum cut blooms were not numerous, there being but two classes, a twenty four and a twelve bloom. Mr. H. JOY, gr. to Mrs. DOUG STURROCK, being 1st in the larger class, and Mr. CHAS. KILNEY, gr. to E. MATTHEWS, Esq., the secretary of the society, in the smaller class.

BURY ST. EDMUND'S CHRYSANTHEMUM.

NOVEMBER 7. The show held under the auspices of this society is one of the finest in the eastern counties. The exhibition held on the above dates in the Iron Exchange was quite equal to its predecessors, and in cut blooms and pot plants was better. Some of the best known growers in East Anglia contributed plants and blooms, the successful exhibitors including: Mrs. B. CROSSLY, Bart., M.P.; Lord DE RAVENSBOROUGH, JAS. MILLER, Bart., Sir J. BRUNNELL MAULE, M.P., Mr. W. R. SEAGO, Oulton Hall, Lowestoft; the Marquess of BRISTOL, and Hon. W. LOWMYER.

The 1st prize for a standard group of Chrysanthemums and foliage plants was gained by Mr. G. MILNE-CROSSLAND, Hardwick House gr., Mr. B. Marks, who had an excellent group, and the 2nd prize by Mr. R. BURNETT, Westley hall gr., Mr. W. Ingram, for a very good group, but rather too heavily arranged. Mr. BURNETT had previously won the 1st prize on three years in succession. The 3rd prize for a standard group of Chrysanthemums and foliage plants was gained by Mr. G. MILNE-CROSSLAND, Hardwick House gr., Mr. B. Marks, who had an excellent group, and the 2nd prize by Mr. R. BURNETT, Westley hall gr., Mr. W. Ingram, for a very good group, but rather too heavily arranged. Mr. BURNETT had previously won the 1st prize on three years in succession.

The 4th prize for a standard group of Chrysanthemums and foliage plants was gained by Mr. G. MILNE-CROSSLAND, Hardwick House gr., Mr. B. Marks, who had an excellent group, and the 2nd prize by Mr. R. BURNETT, Westley hall gr., Mr. W. Ingram, for a very good group, but rather too heavily arranged. Mr. BURNETT had previously won the 1st prize on three years in succession.

The 5th prize for a standard group of Chrysanthemums and foliage plants was gained by Mr. G. MILNE-CROSSLAND, Hardwick House gr., Mr. B. Marks, who had an excellent group, and the 2nd prize by Mr. R. BURNETT, Westley hall gr., Mr. W. Ingram, for a very good group, but rather too heavily arranged. Mr. BURNETT had previously won the 1st prize on three years in succession.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 8. The fifteenth annual show in the Guildhall was a decided success. Groups of Chrysanthemums were a feature. The plants belonging to Mr. B. HUGHES, The College, Windlesor gr., Mr. G. STREET, were dwarf, well clothed with foliage, and earned capital blooms.

Special encouragement is given to plants cultivated for conservatory decoration. These should be dwarf, not stilly branched, should possess good foliage, and have not fewer than five blooms on each. The result was therefore that such varieties as C. H. Curtis, Ma. Perfection, K. Hooper Pearson, Lady Hanham, Mrs. Barkley, and Sylvia, were not more than 3 feet high, yet bore flowers that would not disgrace a chrys for cut blooms. Mr. ALANS, gr. to Col. F. A. DRISDAK, Edge Hill, Winchester, secured the principal prizes in all the classes set apart for this section.

Three capital groups of miscellaneous plants arranged for effect were staged. Mr. F. LONG, gr. to F. C. FRANK, Esq., Clavelly Winchester, was 1st, and Mr. H. J. FITZGERALD, gr. to the Hon. H. SEWELL, Oakwood Lodge, Otterbourne 2nd.

CUT BLOOMS.

Were numerous and good. The principal class was that of twenty eight distinct, half to be included, and the remainder Japanese. Mr. J. HUGHES, gr. to Messrs. A. HARRIS & SONS, Guildford, secured the premier Award with handsome Japanese and neat mixed specimens. Some of the most noteworthy blooms were Mrs. J. W. BARKLEY, Lily Mountford, Mrs. Cousins, Mrs. Weeks, Lord Salisbury, Sir H. Kitchener, Miss A. Byron, and Lady Hanham, and amongst the mixed, Duchess of Fife, C. H. Curtis, Bartwell Glory, Lady Isabel, and Talene were the most noteworthy. Mr. NEVILLE, gr. to F. W. FRANK, Esq., Conishead, Tisbury, was an exceedingly close 2nd, with better mixed lots, but weaker Japanese blooms.

Mr. J. W. BARKLEY, gr. to F. B. TAYLOR, Esq., Sherfield Manor, Basingstoke, secured the leading place for thirty six Japanese blooms.

The class for twelve Japan e produced a dozen competitors. Mr. W. ASLEY again asserted his superiority, winning easily, Mr. DAVEY, gr. to Mrs. GEORGE HAMBLEDON, 2nd.

Mr. HUGHES was the most successful with mixed varieties.

Amateurs exhibited well. Mr. YASON, North Wall

and Mr. S. CHITTON, Clifton Road, Winchester, were 1st and 2nd respectively.

Quite two of the best classes in the show were those for twelve bunches of Japanese and Pompons respectively, to be shown as grown, without disbanding. Mr. HUNT, gr. to J. R. MOSS, Esq., Fern Hill, Blackwater, won the 1st prize in each class.

NON-COMPETITIVE EXHIBITS.

Messrs. HILLIER & SON, nurserymen, Winchester, showed Apples and Peas; Mr. B. LABHAM, Nurseries, Shirley, Southampton, a piece of rockery, planned for effect and arranged by Messrs. W. H. SELL and H. H. BISHOP, Southampton, had a magnificent display of Cattleya aurea and C. lobata.

BEKENHAM HORTICULTURAL.

NOVEMBER 8.—"Sweet Scented Plants and Shrubs," was the subject brought before the Society by Mr. St. J. TUCKER, on the above date, illustrated by maize lantern, and the very extensive collection of spices, herbs, woods, resins, seeds, nuts, roots, and manufactured articles, kindly lent by Messrs. Carter & Co., High Holborn. The plants grown for the extraction of scents, such as Lavender and Peppermint, Mr. TUCKER thought might be much more extended for commercial purposes.

Mr. CROSSWELL exhibited some fine single Chrysanthemums raised from seed, of which Miss Mary Anderson appeared to have been one of the parents. Mr. W.

ALTRINCHAM, SALE, AND BOWDON HORTICULTURAL.

NOVEMBER 5.—From what appeared to be a gloomy outlook last year in matters financial, this most promising Society has this year emerged with a balance of £30, and judging from the substantial prize list and the magnificent show which opened in the spacious Drill Hall at Sale, on Friday last, the committee are determined to keep faith with their subscribers.

The groups of Chrysanthemums were not quite so numerous, but the quality was excellent. Mr. LEAM among the 1st prize and the Gold Medal given by the President, B. T. EDWARDS, Esq., with large flowered varieties, the majority of which were fit for the exhibition board.

The decorative groups are always interesting, our forming as they usually do, most of the smaller flowered varieties. Mr. J. ASHBROOK, gr. to W. R. EDWARDS, Esq., Lime Grove, Brooklands, scoring a decisive victory.

Old flowers were more prominent than at any previous show, in fact, several of the stands were absolutely covered.

For twenty-four varieties, Japanese and incurved, besides a capital money prize, valuable silver cup, presented by the Tradesmen of the district, was also included. Mr. H. MOTTAM, gr. to Messrs. J. H. A. WAINMAN, The Priory, Bowdon, was 1st, every flower in the stand being perfect in form and colour. Mr. J. MOTTAM, gr. to Mrs. BAKER, Beech Mount, Bowdon, was an excellent 2nd.

In the single classes for twelve Japanese and twelve incurved, Mr. H. MOTTAM was again in great form, the varieties being similar to those shown by him in the larger class.

Plants were numerous, as were also the incurved varieties, which included Roman Hyacinths.

The best classes made a good display. Mr. J. ASHBROOK taking many prizes. The non-competitive exhibits included a fine contribution of Apples and double Primulas from K. F. GILL, Esq., Bowdon Grapes, Peas, Apples, &c., in splendid condition, from Mr. WILKES, gr. to Miss LEED, Ashton Moss.

A first class Certificate was unanimously given to "Chrysanthemum 'Mr. J. Janson,' a grand flower which might fittingly be termed a 'carnegie' 'Ans. trade,' and which was raised by Messrs. Clifton & Son, Altrincham, Chesh.

WELLINGBOURGH CHRYSANTHEMUM.

NOVEMBER 9.—At this Society's seventeenth annual exhibition the entries were not quite so numerous as usual, but the quality was better.

For a collection of Chrysanthemums the 1st prize was taken by Mr. W. ASHON, Wellingborough; and Mr. WARD, Wellingborough, 2nd.

Mr. WARD also had the best four Chrysanthemum plants, and Mr. MEYER the best specimen Chrysanthemum.

For Primulas Mr. H. LATFORD took 1st prize, also for six plants H. E. & W. LOCK, Wellingborough, were 1st, and the Marquis of Northampton, Castle Ashby, gr. to J. HAYES, 2nd.

In the cut flower section, for eighteen varieties, Mr. W. KIRBY, Northampton, was 1st, and Mr. HAYES 2nd. Mention ought to be made to Mr. Kirby, is an amateur, and great credit is due to him for beating his professional opponent. Mr. Kirby also beat Mr. Hayes for twelve incurved varieties and for twelve white varieties.

Mr. WARD was 1st for twelve bunches of Chrysanthemums. Mr. G. DOUGLAS, Wellingborough, had the best pompon; and Messrs. CLAYSON & SON, Wellingborough, 1st for a wreath.

Messrs. H. E. & W. LOCK staged the best collection of Apples, and was also 1st for six dishes of Apples, and was in the front for Peas.

For two bunches of Grapes Mr. H. LATFORD was 1st, and Mr. HAYES staged the best collection of vegetables. H. K.

ECCLLES HORTICULTURAL.

NOVEMBER 8, 9.—The thirteenth exhibition was held in the Town Hall on the above dates, and may be said to have been one of the best yet held under the auspices of the society. The entries were larger than last year, and the quality nowhere over the average.

For Chrysanthemums in pots, Manchester alone can supersede this splendid show, and Mr. F. MULLOY, gr. to T. HARKER, Esq., was 1st for nine plants, six plants, six plants Japanese, three singles, three Pompons, and three plants not disbanded, with a display that was in every point excellent. So, too, in the cut flower classes the same excellence was maintained. Mr. J. KIRKMAN, gr. to J. S. STANSON, Esq., Lytham, having Japanese of perfect contour and size. His incurved varieties were much behind the 2nd prizewinner, Mr. Young, gr. to S. J. WILLIAMSON, Esq., Otterspool House, Otterspool, Liverpool, who showed remarkably well, and who distinguished himself by showing for the premier bouquet in the show a splendid Lady Isabel.

In the miscellaneous class which includes Anemones, incurved Japanese, and reflexed, and which goes to keep up a beautiful feature in the show, Mr. J. ROBERTS, gr. to Miss A. LINDHOLM, had a charming stand.

Other prizewinners were Mr. R. WAINWRIGHT, gr. to A. CROSS, Esq., for twelve splendid incurved varieties; Mr. J. KIRKMAN for twelve magnificent Japanese; and Mr. MULLOY for six incurved and Japanese varieties. The two classes were a special feature. Mr. J. GUNN, gr. to W. S. BARNARD, Esq., Esq., winning with a specially good exhibit.

The incident classes were more than adequately filled, the Challenge Cup being won outright by Mr. JAMES ALBERTS.

In no place could finer bouquets be seen than those shown by Mr. J. S. KIRK.

The Polls from Mr. Elkin, gr. to Mrs. THOMAS & SON, helped materially to relieve the somewhat monotonous rows of flowers, *traded*.

GLOUCESTER ROOT, FRUIT, AND GRASS.

NOVEMBER 7.—The annual Gloucestershire Show in conjunction with the Gloucester Root, Fruit, and Grass Society, was held in the Shire Hall, Gloucester, on Saturday last, and proved in many respects a distinct advance on previous exhibitions. The entries were more numerous, and the quality of the exhibits was above the average, while the competition in all the classes was of the keenest.

For the best group of Chrysanthemums in pots arranged on a space not exceeding a foot by a foot, W. BRADY EMMETT, Hasfield, gr. Mr. J. APPEL, secured the 1st prize. W. GAMBOLD, Gloucester, gr. Mr. C. TIDMAN, 2nd, being placed 2nd.

For twelve incurved cut blooms, Col. ROBERTS, Mayor of Cheltenham, repeated his successes at Cheltenham the week previous, and gained 1st prize. J. HONNICK, Esq., Conley Manor, Cheltenham, gr. Mr. MACKENZIE, taking the 2nd award.

In the class for eighteen Japanese cut blooms, Mr. EDWARD S. GOSEBELL, Stroud, took the premier honour, and A. W. G. WELSH the 2nd prize.

Mrs. SWINBURNE, Wincoboe, gr. Mr. J. MARTIN, won the 1st prize for twelve incurved Japanese blooms, and Mr. A. W. G. WELSH was 2nd.

The display of fruit was the largest and best ever staged in the history of the Society. J. P.

ROYAL HORTICULTURAL OF ABERDEEN.

NOVEMBER 9.—The annual general meeting of this Society was held in the Music Hall Buildings, Aberdeen, on Saturday evening, the attendance being good. Mr. W. PATER, of Hillhead, presided.

The Society has £18 6s. 10d. at its credit to carry forward to next season, the deficit of £22 15s. 3d. on last year's accounts having been generously wiped off by one of the directors.

The President (Lord Provost Fleming), Vice Presidents, and Honorary Directors were all re-elected.

Mr. Alexander Milne was elected Vice Chairman, and all the Directors were re-elected with the exception of Mr. M. Donald, gr. late of Balgownie Lodge, who has gone south, his place being taken by Mr. SIM, gr. Gleburne Park.

The usual words of thanks concluded a most harmonious meeting.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

NOVEMBER 11.—The usual monthly meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand. Three new members were elected, and one other nominated. The Secretary reported four members on the Sick Fund. The amount paid to sick members since the last meeting was £8 2s. The Treasurer was authorised to invest £100 in the best available Trustee Stock.

DEVIZES BENEVOLENT SOCIETY'S CHRYSANTHEMUM.

NOVEMBER 12.—At Devizes, the Chrysanthemum is enlisted on the side of charity, and a show is held in connection with a Lazar, in aid of the Benevolent Society. By this means a considerable sum is obtained for distribution among the poor of Devizes. The show took place in the spacious Corn Exchange.

In the centre were four large circular groups of Chrysanthemums and foliage plants; Mr. H. CLACK, gr. to C. E. COLESON, Esq., M.P., Roundway Park, taking the 1st prize with a highly intricate one; Mr. W. OGDEN, gr. to the Marquis DE LAVALLE, Draycott House, Clippenham 2nd.

Among the new classes in the schedule was one for twenty-four distinct blooms of incurved. This brought Mr. W. HIGGS, from Fetcham Park, Leatherhead, with his superb blooms, such varieties as Frank Hammond, Middle, Lucie Faure, Bunwell Glory, Duchess of Fife, C. H. CHRIS, Lady Isabel, Boume Dunire, very fine, Nellie Southern, Mr. Perfection, Pearl Palace, &c. were seen at their best. Mr. G. W. DIXON, Cornhill, was 2nd, with large blooms of general good quality.

Some magnificent Japanese blooms were staged by Mr. F. S. VALES, Bromham, in the class for twenty-four varieties, being fresh, bright, and finely developed. It is intentions to select, but the following were very striking: E. Molyneux, Mrs. W. Mease, Le Grand Dragon, Mrs. J. Lewis, Madame Carnot, Calvat's "299," Mrs. Anderson, Nellie Patten, Broom, Ethel Fitzroy, W. R. Church, St. Ag. Mr. F. BIRK, was 2nd.

With twelve blooms in a class for exhibitors residing in the county of Wilt, Mr. F. S. VALES was again 1st; and Mr. H. CLACK 2nd.

An unusual class was that for twelve Japanese, six white and six yellow. Again Mr. VALES was 1st; he had three varieties viz., Mrs. J. Lewis and Madame Carnot, white, and G. J. Warren, yellow. Mr. BIRK was a good 2nd.

There was a class for twelve incurved Japanese blooms, and here Messrs. VALES and BIRK were 1st and 2nd, both with very good blooms.

Mr. H. CLACK was the only exhibitor of twelve Anemone flowered varieties, having mainly Japanese in good character, and he was awarded the 1st prize.

A class for a basket of hardy autumn foliage, with or without flowers, brought twenty-three exhibits, mostly by young girls.

The admirable arrangements made by Mr. THOS. KING of the Castle Gardens, who acted as general manager greatly pleased everyone.

CHESTER PAXTON.

NOVEMBER 12.—This Society is doing a valuable work. It holds periodical meetings where instructive papers are read upon horticultural subjects, and occasionally has such shows as that held upon the above date in the Town Hall. Mr. N. F. BARNES, of Eaton Hall Gardens, is the popular President, and Mr. G. P. MILN, Secretary. The principal feature of the recent show was the grand collection of fruit, and the decorative stands of flowers arranged in old-fashioned vases from Mr. N. F. BARNES, gr. to the Duke of WESTMINSTER, the fruit comprising everything in season.

For six dishes of Apples grown in the open, Mr. J. WAINSON, Pomona Farm, Hereford, won 1st prize, and Messrs. PEWISSEY BROS., Hereford, were 2nd.

The latter firm secured the prize for the best packed Apples, having six boxes of Blenheim Pippins.

There were forty separate classes for the best known varieties of Apples, and brilliant they looked.

In the Pear classes, too, a many excellent fruits. The principal prize-winners were, The Rev. L. GARNETT, J. SANDERSON, G. W. BARRETT, J. TOWNSEND, J. M. FROST, E. DICKSON, J. LEE, G. FAULKNER, Mrs. TOWNSEND, Mrs. HENDERSON, and Mrs. BAILEY. The Black Albion variety from Mr. Stubbs, gr. to Captain MACGILLIBRAY, Barle Hall, and the Muscat of Alexandria from Sir G. MERRICK, Bart, Bodorgan, Anglesey, were grand.

Groups of plants for effect were very pretty this season. Mr. STUBBS was 1st, and Dr. LAWRENCE 2nd.

Cut flowers.—In the leading class, Mr. C. THIBRELL won 1st prize, 2nd Sir G. MERRICK. In other classes, Dr. LAWRENCE, Mr. C. W. BARRETT, Mr. W. T. JONES and Mr. E. STUBBS.

There were good exhibits of specimen Chrysanthemum plants and of other decorative species.

Messrs. DICKSONS, Ltd., Chester, showed a most effective stand of Primulas, &c. Mr. McHAFFIE a similar exhibit; and Mr. H. G. LITTLE, Colonial fruit.

DEVON AND EXETER HORTICULTURAL.

NOVEMBER 11, 15.—The fixture being one of the latest in the district, and a two days' show, the exhibition suffered through several of the prominent growers having their flowers too forward. Entries in Chrysanthemum classes were less numerous than usual, but the quality generally was good in the cut bloom classes, while the principal groups were superior to those shown in former years. In the fruit classes exhibits were numerous, and the quality was first-rate.

CHRYSANTHEMUMS.

For the best group of Chrysanthemums in not fewer than eighteen varieties, arranged in a circle of 10 feet diameter, there were but two competitors. They had met before and contested for this, the premier prize, but on this occasion the competition was keener than ever. The result was that Lady DECKWORTH, Knightleys (gr., Mr. W. R. Baker), was placed 1st, Mr. W. BROOK, Parkerswell (gr., Mr. W. Rowland), 2nd. While Mr. ROWLAND staged a most effective group, Mr. BAKER'S group was the heavier in bloom. Two finer groups have not been put up in Exeter.

In the smaller group of not fewer than fifteen varieties with an 8 feet diameter, SIR DUDLEY DUCKWORTH KING (gr., Mr. Sidney Baker, a son of Mr. Baker of Knightleys), was 1st with an excellent group.

In the next class for a semi circular group, 9 feet by 5 feet, for Chrysanthemums in pots not over 6 inches wide, a very fine exhibit was staged by Mr. C. M. COLLINGSWOOD, of the Institution for the Blind, Exeter.

For a group of miscellaneous plants 7 feet square, the title to supremacy lay between Mr. ROWLAND and Mr. W. R. BAKER. Both were very good, but on the score of height arrangement the judges gave the preference to Mr. ROWLAND.

CHRYSANTHEMUM BLOOMS.

In the premier class for thirty-six blooms, Japanese, not fewer than twenty-four distinct varieties, the 1st prize fell to Mr. B. H. HILL, of Crediton (gr., Mr. Geo. Lock), notwithstanding the lateness of the date, he staged a fine lot of blooms.

In the next class for eighteen blooms in not fewer than twelve distinct varieties, the 1st prize was also awarded to Mr. HILL.

W. B. HEBERKIN, C.B., President of the Society (gr., Mr. G. C. Cole), won 1st prize in the class for twelve blooms.

In the class for twelve Japanese, in vases, the 1st prize was awarded to Mr. B. H. HILL, Crediton.

In the next class for twelve blooms in not fewer than twelve distinct varieties, the 1st prize was also awarded to Mr. HILL.

For six incurved blooms, the chief prize went to Mr. C. M. COLLINGSWOOD for perfect though not large blooms.

For single Chrysanthemum, Mr. JUSTINE SWINLEN-EADY (gr., Mr. James Lock), staged a nice lot.

FRUIT.

Grapes were the best class shown in Exeter for many years. The Rev. H. CLERK, Exmouth (gr., Mr. R. Pike), was 1st for three bunches of Black Alicante, shown in perfect condition.

In three bunches of Muscat of Alexandria, Lady PEEK, Rousdon (gr., Mr. A. Bailey), was 1st, with large and handsome grapes in bunch and berry, and of marvellous colour. Mr. J. F. J. BAXSALTYNE, Haldon House (gr., Mr. A. Elliott), was a good 2nd.

In the class for three bunches of any other kind, the Mr. Justice EADA was 1st, with Althwick Seedling.

For the special prize offered for three bunches, distinct varieties, quality to be the first consideration, Mr. BAXSALTYNE took premier place with well-finished fruit of Mrs. Prince's Black Muscat, Black Alicante, and Muscat of Alexandria. Mr. Justice EADA was 2nd, with Mr. Pearson, Althwick Seedling, and Muscat of Alexandria.

Apples.—The competition was keen. 1st prize for thirty dishes (fifteen culinary and fifteen dessert) went to SIR JOHN SHELLEY (gr., Mr. K. Mairs), 2nd to SIR JOHN PEARSON DAVID, Credeney Park (gr., Mr. Seward).

In the twelve dish collection, SIR T. D. ALCAND, Holmcoate (gr., Mr. John Blackmore), was 1st.

For the best dish of dessert Apples not named in the schedule, LORD POLTRUNO (gr., Mr. T. Slade), was 1st, with Margil.

For the best culinary Apple not named in the schedule, Mr. W. J. BARTISBILL, Wotton (gr., Mr. Bradford), was 1st, with Annie Elizabeth.

The prizes for flavour were, as usual, given to Cox's Orange Pippin.

Pears.—For six dishes dessert and three culinary, SIR JOHN SHELLEY was 1st; and for six dishes of dessert, Mr. F. R. HEVENS, Alplington (gr., Mr. G. Anning), was 1st.

In the single dishes, very fine. The 1st prize for any dessert variety not named in the schedule was won by F. T. KERKWAICH, with Marie Louise; and the culinary

by SIR JOHN SHELLEY, with Black Pear of Worcester.

Premier honours for flavour went to Poyenne du Comice, shown by Mr. T. KERKWAICH.

HONORARY EXHIBITS.

came from Messrs. Robert Veitch & Son, J. King, G. C. Sclater, Jarman & Co., and Sir John Kenaway, Exeter, who exhibited boxes of very choice fruit (Apples) packed in small and attractive boxes, made up ready for sale.

BARNESLEY CHRYSANTHEMUM.

NOVEMBER 11, 15.—The Barnesley Chrysanthemum Society is to be congratulated upon the success attending its fifteenth annual show. The committee recognising the fact that they have to rely to some extent upon the subscriptions generously given by those who are not members of the horticultural craft, but who are enthusiastic in the delights which a show at this time of the year affords, have wisely provided good musical entertainment.

The prize-money offered this year was shortly under £100, and there were two silver cups, besides the National Chrysanthemum Society's Certificates, and the medals and certificates offered by Messrs. Tootwood & Sons. The show throughout was an excellent one, the entries numbering 280 as against 179 last year, and the quality of the exhibits showed a decided improvement. Incurved varieties largely predominated, especially among cut flowers. Mr. Alderman, gr. to J. W. ELLIS, Esq., J.P., of Worktop, who took six or seven of the best prizes, quite ran away from his competitors, and his exhibits were greatly admired. The groups were very good, both as to flowers and arrangement; and though in the large class the winner perhaps had a superabundance of foliage, and less bloom than might be wished, it was pleasing to see the prize go to a local exhibitor. The cut flowers were fresh, brightly coloured specimens, and not over large. Mr. W. B. Armitage, the genial Secretary, worked hard for the show's success, and to him must be awarded great praise. The following were the awards in the open classes.

Groups of Chrysanthemums, flowering and foliage plants, occupying 9 square feet. 1st, Mr. A. GIBSON, gr. to R. K. MICHIELEWAT, Esq., Ardsley.

CUT FLOWERS.

Eighteen incurved, not fewer than twelve varieties. 1st, Mr. A. Alderman, gr. to J. W. ELLIS, Esq., spoken House, Worktop, 2nd, Mr. A. Brookes, gr. to Committee of Loose, Womersley Park, Pontefract.

Eighteen Japanese, not fewer than twelve varieties. 1st, Mr. A. ALDERMAN; 2nd, Mr. E. HILL, gr. to Mrs. Mowds, Beethfield, Doncaster.

Twelve incurved, not fewer than eight varieties. 1st, Mr. A. ALDERMAN; 2nd, Mr. A. BROOKES.

Twelve Japanese, distinct. 1st, Mr. A. ALDERMAN; 2nd, Mr. E. HILL.

Six Japanese, distinct. 1st, Mr. A. ALDERMAN; 2nd, Mr. A. BROOKES.

Six Anemones, not fewer than four varieties, and not more than two of one variety. 1st, Mr. G. WILKINSON, Barnesley; 2nd, Mr. A. LOCKWOOD, Barnesley.

Six vases of flowering Chrysanthemums, three of one variety in each vase. 1st, Mr. A. ALDERMAN; 2nd, Mr. T. KERKWAICH.

FRUIT.

Collection of dessert fruit. 1st, Mr. J. FUDLEY, gr. to Mrs. HEYWOOD JONES, Badsworth; 2nd, Mr. ALDERMAN. Black and white grapes: 1st, Mr. A. ALDERMAN; 2nd, Mr. T. KERKWAICH.

During the proceedings an interesting paper was delivered to a large audience by Mr. Leadbeater, Tranby Croft Gardens, on "The Manipulation of Chrysanthemum Plants."

MAIDENHEAD CHRYSANTHEMUM.

NOVEMBER 14, 15.—The fourth annual exhibition was held at the Town Hall, and although there was a slight falling off in the number of entries, the quality was excellent throughout.

CUT BLOOMS.

The leading class was for thirty-six Japanese blooms, in not fewer than twenty-four varieties. The 1st prize was well won by Mr. Watson, gr. to F. Cox, Esq., of Harfield Place, Uxbridge, with some very fine flowers. Mr. J. Cole, gr. to Sir CHAS. RUSSELL, Bart., Swallowfield Park, Berks, was 2nd.

For eight vases of specimen Japanese blooms, each vase containing three blooms of one variety, Mr. Fulford, gr. to F. D. LAMBERT, Esq., Moor Hall, Cookham, staged a magnificent collection, and won a silver Cup presented by the trustees of Maidenhead.

What twelve Japanese, Mr. J. T. YOUNG, Clewer, was 1st.

For six Japanese of one variety, Mr. Davis, gr. to H. ADAMS, Esq., Cannon Hill, Bray, was 1st with Australie.

A class was provided for eighteen Japanese blooms,

distinct, arranged on a space 5 feet by 3 feet, with the addition of any other foliage plants or foliage. The 1st prize was awarded to Mr. C. Young, gr. to G. Field, Esq., of Maidenhead, the only exhibitor.

Incurved blooms were above the average. With twenty-four blooms in eighteen varieties, Mr. WATSON was 1st; 2nd, Mr. G. LANE.

For twelve incurved, distinct, Mr. C. YOUNG was 1st. Mr. COLE staged the best six blooms of one variety, Duchesse of Fife.

Mr. FULFORD was the only exhibitor of a group of Chrysanthemum plants for effect, a very good one.

The same exhibitor was also 1st for a very handsome group of miscellaneous plants; closely followed by Mr. Richardson, gr. to G. HERBING, Esq., Bridge House, Maidenhead.

Mr. F. COLE won the leaving prizes in the Grape classes; and Mr. D. PALTON was a successful exhibitor of vegetables.

Messrs. W. & R. OWEN, Mr. E. F. SMITH, and Mr. BROUGHTON were the principal exhibitors in the non-competitive section of the show.

SCOTTISH HORTICULTURAL.

NOVEMBER 11, 15, 16.—The Chrysanthemum exhibition was held on the above dates in the Vauxley Market, Edinburgh. No fewer than 1000 blooms were staged in competition, making one of the finest displays of cut blooms seen this season. Plants were of moderate quality only; the cultivators in this district strive to obtain too large an area of tramping-space, many plants measuring as much as 5 ft. in diameter, the result being they are too much drawn out to be of use in a decorative sense, and what is still more important, the blooms are of poor quality. Fruit—Grapes, Apples, and Pears—as well as vegetables, were of high quality.

Wines are termed "decorative" plants. Grapes, Crotons, Begonias, Ferns, &c., in 9-inch pots, are a feature here, and are well cultivated. As usual, the management was of the right order, Mr. Peter Loney proving a worthy successor to Mr. R. P. Laird—himself a model official.

CUT BLOOMS, IN VASES.

The principal class was that for twenty varieties, three blooms of each; a gold medal was offered as the premier award. Six collections made a grand display. Mr. T. LUNT, gr. to Captain STELLINGS, Keir, Dunblane, was the winner. So uniformly good were his specimens that we append their names:—Mrs. Cadbury, Lady Kidgway, Mrs. J. R. Thomeycroft, M. Louis Remy, Le Grand Dragon, Mons. Hoste, Mrs. Weeks, Eva Knowles, Australie, Mrs. Barkley, J. E. Clayton, Mrs. J. Bryant, Mr. A. Barrett, Mme. P. Rivore, Edwin Molyneux, Nellie Pocket, Florence Molyneux, Alice, A. Rousseau, H. Weeks, and Mons. Chénon de Lachie. Mr. J. Betsworth, gr. to Mrs. ARMITAGE, Castle Huntly, was a good 2nd, with many magnificent blooms; Mr. J. Cunningham, gr. to Lady SEWARD, Grantully Castle, Aberfeldy, 3rd.

For fifteen varieties, three blooms of each, for which the City of Edinburgh prize, value £20, was offered, nine competed. Here Mr. D. NICOL, gr. to J. W. BELL, Esq., Rosbie, Forgandenny, was the premier prize taker, with even, handsome blossoms of popular varieties. Mr. H. Gold, gr. to Lord ELLIOTT-ROSE, Carberry Towers, was 2nd.

For the Scottish Cup, offered for twelve varieties, three blooms of each, eight competed. Mr. T. LUNT was again successful, winning easily. Mr. BRISTAN was a close 2nd.

In the class for four varieties, three blooms of each, ten entered. Mr. J. Bouchier, gr. to H. E. GORDON, Esq., Aitkenhead, Cathcart, secured the leading position with a fine set. Mr. J. DRY, gr. to Lord GALLOWAY, Galloway House, Dunfermline, 2nd.

Eleven competed in a class for six Japanese blooms of any one variety. 1st, Mr. W. Lamont, gr. to Rev. R. MACANBY, Brizlee, Colinton Road, with typical blooms of N. C. S. Jubilee; 2nd, Mr. MCINTYRE, The Glen, Inverlathie, with Mrs. Barkley.

For three varieties decorative Chrysanthemums, not subdivided, with any foliage, no fewer than fourteen competed. Mr. W. GILFILLAN, gr. to Lord WEMYSS, Gosford, Longniddry, won 1st prize, with huge pyramids of Le Triomphante, Source d'Or, and Melancie Fabre. Mr. J. Mcgregor, gr. to R. H. ELLIOTT, Esq., Clifton Park, Kelso, 2nd.

Single-flowered varieties were a distinct feature, so numerous were the exhibits. In this class, one vase irrespective of variety was required, Chrysanthemum foliage only to be used. Thirteen entered, and as the bulk adhered to one variety only, a grand display of well-grown blooms was the result. With perfect examples of Miss Annie Holden, Mr. A. Angus, gr. to Lord HAMILTON, Dalzell, Motherwell, was 1st; 2nd, Mr. J. Macinnion, gr. to E. ANDERSON, Esq., Eastwood Hill, with Mary Anderson.

BLOOMS ON STANDS.

For twelve Japanese blooms, distinct, there were as many competitors. Mr. LUNT here securing the leading award, and Mr. J. H. COMMIS 2nd.

An interesting class was that for twelve Japanese in four varieties. Mr. W. LINDLEY, gr. to the Earl of E. S. DICKSON, Dunfermline, won the 1st prize with a grand exhibit.

Incurred varieties were moderately good. Mr. J. MARTIN, Cordeau Hall, Winchcombe, secured 1st prize for twelve blooms, distinct, and for six blooms of any one variety. Mr. J. SHORTON winning for six blooms, distinct.

Anateurs staged well in their respective classes; Mr. R. C. DICKSON, School House, Knapock, winning in several classes with really good exhibits.

The premier bloom of the show was a magnificent one of Madame Cadbury, belonging to Mr. LUNT.

In the plant classes, the leading awards were made in favour of Mr. W. PULMAN, gr. to D. R. W. HISE, Esq., of Hollywood, Colinton Road; and Mr. D. CAVANAGH, gr. to Mr. J. O. COLLYER, St. Edwards, Murrayfield.

First-class Certificates were granted to Japanese Chrysanthemums—Henry Barnes, Mrs. T. W. POKETT, and Mrs. THIRKILL, belonging to Mr. W. WELLS, Earlswood, Surrey, who had an interesting exhibit of new Chrysanthemums. Mr. J. COCKER, Aberdeen, had a fine display of early-flowering Chrysanthemums in huge bunches, which attracted much attention.

MANCHESTER ROYAL BOTANICAL.

NOVEMBER 11, 15, 16.—It was certainly a step in the right direction to leave the Town Hall and move into the spacious St. James' Hall, where there is not only ample room to display the exhibits fully, but a margin left for promenade. There are not too many classes in the Schedule, and the show formed a relief to other shows, where classes are so numerous as to make them bewildering.

The cut blooms shown were remarkable for depth, colour, and freshness. The leading class was for twenty-four mixed and twenty-four Japanese; the fortunate winner who this year wrested the twenty-five guinea Challenge Cup from Mr. West, gr. to E. BEHRNS, Esq., White-church, being Mr. C. CHOOKS, gr. to the Dowager Lady HINCHLIFF, Droitwich. Mr. J. COTTS, Nottingham, was 2nd.

Mr. CHOOKS won another 1st prize for a handsome collection of twenty-four incurred blooms.

For thirty-six Japanese blooms Mr. CHOOKS again proved invincible, but the best collection of eighteen Japanese blooms was one from Mr. A. H. HALL, gr. to C. WADENHOUSE, Esq., who also won 1st prizes for twelve Japanese blooms and twelve incurred blooms.

An important class was that for thirty-six miscellaneous, J. LAMB, Esq., Bowdon, winning.

PLANTS.

The nine specimen plants staged by Mr. MULLOY, gr. to T. HARKER, Esq., Dudshury, were remarkable instances of clever culture. Mr. G. H. GARDNER was 2nd.

The six bush plants and six Pot plants were equally good. J. BROWN, Esq., Henton Mersey, and Mr. J. WATSON winning respectively.

Groups were a centre of attraction, handsomely arranged, save for a somewhat loose frontage. Messrs. J. BROWN 1st, and J. WATSON 2nd.

TRADE EXHIBITS.

There was a large display from the trade. Messrs. CURRIAN & SON, Altrincham, had a collection of Chrysanthemum blooms and many choice plants.

Messrs. DICKSON & ROBINSON, Manchester, had a display of fruit in baskets, Roman Hyacinths, Cyclamen, &c.

Messrs. G. BUNYARD & Co., Madstone, an exhibit of Apples and Peas.

Mr. WELLS, Earlswood Nurseries, Surrey, showed a small stand of new Chrysanthemums.

Mr. R. DOE, gr. to the Right Hon. the Earl of DELAINE, Knowsley Hall, had a decorative table of fruit.

Messrs. CYPRER, The Bentham, CHAMBERSWORTH & Co., Bradford, and Jno. BARNES, contributed collections of Orchids. Gold Medals were awarded in each of the above eight instances. Silver Gift Medals were awarded to Messrs. JNO. WALKER & SONS, for shrubs; Messrs. HUGH LOW & Co., Enfield, and DEERWOLD (Chatham), for Orchids; Messrs. DICKSON, BROWN, & TAYLOR, Manchester, for flowering plants in pots. Silver Medals were awarded to Messrs. A. EDWELL & SONS, Knutsford, for herbaceous and Alpine plants, and to Messrs. J. BOYES & Co., Aylesbury, for Carnations.

An extensive group of beautiful plants was shown by Mr. WEATHERS, from the Royal Botanical Gardens, Manchester.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 15, 16.—The fifteenth annual exhibition was held in St. George's Hall, and was a great success. Dr. H. SMITH proved the winner of the Mayor of Bradford's Cup, with a fine group of Chrysanthemums. There was a good competition for this class, Mr. BELL, gr. to J. KROD, Esq., Bolton Royal, Bradford, taking 2nd prize.

Specimen plants were a feature of the show, the 1st prize for six being won by Mr. J. W. HUTTON, who showed a particularly good lot, and won the Challenge Trophy for the second time.

The open 10-guinea Challenge Cup only brought two exhibitors. Mr. E. ELLIS, Heswall, Cheshire, being 1st, closely followed by Mr. J. COLHER, gr. to G. SINGER, Esq., Coudon Court, Coventry.

For twenty-four incurred, Mr. E. ELLIS was again successful; Messrs. H. CLARK & SON, Rodley, 2nd.

The class for twelve Japanese blooms brought a good entry, the 1st prize going to Mr. C. W. FINDLOW, gr. to G. E. MOSES, Esq., Higher Bebbington, Birkenhead; 2nd, Mr. E. ELLIS.

Lord Masham's Challenge Cup, value 10s., was won a second time by Mr. J. THORNTON, Lumb Hall Nurseries.

Boquet and floral decorations were exhibited in variety. Mr. J. BROOKE, Mr. W. BROOKE, and Mr. SAM DEANE taking the prizes in the order named.

Anateurs were again well to the front, Mr. THOS. BIRD, Messrs. D. BAKER & SON, and Mr. M. PEMBERTON being the principal prize winners. Other successful exhibitors were Wm. MOOPHY, gr. to H. MACKINTOSH, Esq.; F. HOWLAND, gr. to T. ARTOX, Esq.; Wm. BANKS, gr. to A. S. HAGGOS, Oakworth.

The arrangements were well carried out by Mr. W. HORSMAN, Chairman, supported by an excellent committee.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 15.—The Floral Committee will only meet once again this season, at 1 P.M. on December 3, in connection with the winter exhibition. At a meeting held on Monday last, awards were made to the following novelties:—

Incurred variety William Hayes.—A large, massive flower, of very promising character, with good, broad florets; colour fawn or light buff. Shown by Mr. H. J. JONES, Ryecroft Nursery, Hather Green, Lewisham (First-class Certificate).

Single variety Robert Horsman.—Of moderate size, and magenta in colour, with two rows of florets. Shown by Mr. J. E. LOTT, Alexantra Road, Hull (Award of Merit).

Japanese variety, George Herbert.—An Australian seedling. It is a large flower, of golden yellow colour, with very broad florets. The blooms shown were from different buds, and varied in smoothness a little; but the variety will, we think, prove to be first class. Shown by Mr. LOVELOCK (Award of Merit).

The committee commended the variety Mrs. John Lott, a large flowered single, colour magenta, Miss Dorothy Powell, a white Japanese flower, from Mr. H. J. JONES, was a prize.

Obituary.



THE LATE THOMAS MEEHAN.

THOMAS MEEHAN.—On June 15 of the present year, we published a portrait and an account of the life career of Thomas Meehan, who by zeal, dogged perseverance, and constant work, rose from a garden-boy to be the head of one of the largest nursery firms in the United States, a distinguished botanist, and for many years a Vice-President of the Philadelphia Academy of Natural Science. Mr. Meehan had for some time past been in failing health, and now we learn from a cablegram sent to his brother, Mr. Charles Meehan, gr., St. Clare, Isle of Wight, that he died on the 19th inst. On the occasion of his receiving one of the Veitch Medals a few months since,

we published a detailed account of his life and works—an account so instructive and so stimulating, that we can but recommend our readers, and especially young gardeners, to peruse it and profit by its lessons. By his death we lose a friend of thirty-five years' standing, and a contributor to these columns for even a longer period.

MRS. JACQUES.—Many of our readers will learn with regret of the death of Mrs. Jacques, wife of the head gardener to Lord Portman, at Bryanstone, Blandford. Mr. Jacques, who is the eldest son of the gardener at Waddesdon Manor, Aylesbury, and who had been previously employed in the Royal Gardens at Sandringham, had been married only a few months.

WILLIAM BALCHIN.—This gentleman, the head of the extensive nursery firm of Messrs. W. Balchin & Sons, Brighton and Hassocks, died at his residence on the Hassocks Nurseries on the 16th inst., after a painful illness which had kept him confined to his bed for twelve months past. He was in his seventy-seventh year. Coming to Brighton as a young man, and seeing an opportunity to commence business, he in conjunction with his brother-in-law started as Messrs. Balchin & Niel. In course of time the partnership was dissolved, and the business was carried on by Mr. Balchin alone; and under his management it became considerably developed, with branch nurseries at Brighton, Hove, and Hassocks, and conservatories in the Western Road, Brighton, and in the Church Road, Hove. In course of time, two at least of his sons became associated with him in business, and the firm is known as W. Balchin & Sons. At Hassocks, a place a few miles on the London side of Brighton, there is a considerable quantity of glass, and a nursery of forest-trees, fruit-trees, and shrubs. The foreman at the Hassocks Nurseries has perhaps scarcely a rival as a cultivator of hard-wooded plants; his success with such subjects as *Leschenaultias*, *Foronias*, *Eriens*, *Epaeris*, *Chorozeas*, &c., is widely known. There is, as might be expected, a considerable trade connection. Mr. Balchin was often pressed to take part in public life, but his heart was thoroughly in his business, and he would not be drawn away from it. He leaves a widow and eight children. His funeral took place in the Hove Cemetery on the 20th inst.

ENQUIRY.

VIOLETS.—What cause can be assigned or remedy suggested for the following apparently arrested flowering of Violets? I live in Staffordshire; all round are gardens where Violets in frames flower well from September to May. In my case the Violets (strong, large clumps), have for two years running been lifted into the frames at the end of August, buds have formed, five or six showing on a plant, and then nothing has happened; the buds have not damped off but simply remained apparently in a state of arrested development till the end of February, when they have flowered profusely. Can it be the particular locality, or can any chemical application be suggested to push on the flowering without stimulating plant growth? It has been said that former gardeners have been unable to flower Violets at this particular place, but I do not credit it. B. L. [We should be glad to hear what our Violet growers have to say on this matter. Ed.]

TREES AND SHRUBS.

EUCONYMUS RADICANS VARIEGATA.

ATTENTION has been recently directed in the *Gardeners' Chronicle* to this plant, and to its value for covering walls. For many years the fronts of some four or five cottages at Hampton, have been completely covered by this plant, which must have been planted a number of years, for when I first saw them twelve years ago, the shoots had then reached to the eaves, 20 feet above the ground. At this point the shoots were stubbed back, otherwise the gutter would have been interfered with. What particularly struck me was the uniform covering of the entire frontage by the plants. It is a pity so good a wall-plant is not more frequently employed in this manner.

In the late Robert Parker's nursery at Tooting, many years ago, this plant was employed as an edging similarly to Box, and also as a wall covering. Right and left of the seedshop door the plant clung closely to the wall, and it was more than 12 feet high; while the borders, some 200 yards long, by the sides of the walk leading to the shop, were edged with plants which then were about 15 inches high.

The plant is self-clinging. Those who may require the plant for this purpose, should obtain long cuttings, and having rooted them, place in the desired spot, for the old plant requires time to get out of its clustered growth, and become elongated. *E. H. Jenkins, Hampton Hill.*



"ABNORMAL GROWTH" ON BRAMBLES: *Entomology.* This is produced by *Diatrophus rubi*, a fairly common insect.

BOOKS: *Decon.* We believe Mr. L. Upcott Gill published, some years ago a manual on the Peach, written by the late D. T. Fish. Apply at the *Bazaar Office*, 170, Strand, London, W.C.—*L. T. C. C. Culture for Amateurs*, by W. Watson. Published by Upcott Gill, 170, Strand, London, W.C.

CHRYSANTHEMUM BLOOM: *R. H.* We cannot comply with your request, as the bloom reached us on Tuesday last, and the next meeting of an authoritative Committee will be that of the R.H.S. on the 26th inst. The National Chrysanthemum Society's Committee will not meet until December 3. You describe the yellow flower as a sport from Miss Edith Pilkington, but we can see no evidence of this. Miss Edith Pilkington is a rich golden yellow-coloured Japanese, with fine broad florets. On a terminal bud the flowers sometimes are bronze-coloured.

COLEUM LEAVES DROOPING AND CRIPPLED: *F. Lodge.* The result, probably, of a sudden lowering of the temperature of the house at night, owing to a cold snap, such as occurred a few weeks ago in the London district.

CORRECTION—*CISTYLA*: *J. E. J.* The species growing on Ivy in the Trinity College Botanic Garden is, as has often been noted in our columns, *C. reflexa*, not *C. europaea*, as stated in error.

HARDY CLEMATIS: *A Constant Reader.* Probably *Begonia radicans*; send flowers and foliage another year, ripe wood being scarcely enough for identification.

POLYHOMBS DISEASE: *F. S.* Puccinia *Malvacarum*, the dreaded disease of the Mal-

hook. Burn all affected plants, and annihilate all Marsh-mallow plants that may be growing in the vicinity of the garden.

LIME FOR SLUGS ON CELERY: *Decon.* Not gas-lime, but freshly slaked stone or chalk lime.

** NAMES OF FRUITS AND OF PLANTS, SPECIAL NOTICE: *We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Not more than six specimens should be sent. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.*

NAMES OF FRUITS: *J. G., Gloucester.* 1, Calville Rouge d'Hiver; 2, Waltham Abbey Seedling.—*Logan.* Please send a small sample of the wood of each tree, and describe the habit of growth. Attach the same numbers as those given with the Apples, i.e., 1, medium red fruit; 2, conical yellowish fruit. We will keep the Apples received until samples asked for arrive.—*A. P. M., Dartington.* *Beurre de Jonghe.*—*F. Y.* *Beurre Sterckmans.*—*E. W. K. Pears.* 1, Passe Colmar; 2, *Beurre Superfin*; 3, *Durondeau*. Apples: 1, *Cockle Pippin*; 2, *Kerry Pippin*.—*R. C. H. Marechal de la Cour.*

NAMES OF PLANTS: *J. F.* *Cologyle-lagenaria*, or, as it is more often called in gardens, *Pleione lagenaria*; also known as Indian Crocus.—*James Cornford.* *Crinum abyssinicum.*—*W. H. H.* *Sodium carnosum*, variegated form.—*C. H.* *Herts.* The grey-green plant is *Echeveria secunda glauca*. The other *Begonia heracleifolia*.—*F. M.* 1, *Cattleya Warscewiczii*; 2, *Cattleya labiata*; 3, *Solenopodium sculorum*.—*W. C.* *Cheltenham.* 1, *Crataegus pyracantha*; 2, *Berberis vulgaris*; 3, *Eriobotrya japonica* (Loquat), a Japanese fruiting plant.—*R. B.* *Shrewsbury.* Both very fine forms of *Cattleya labiata*: No. 1, an exceptionally richly-coloured variety.—*G. B.* *Herts.* *Cattleya Warscewiczii*, often called *Cattleya gigas*; a very good variety.—*C. J.* 1, *Polypodium aureum*; 2, *Adiantum Waltoni diffusum*; 3, *Xiphidium Molle*; 4, *Asparagus procerbens*.—*Constant Reader.* *Lycopodium scandens*.—*J. T. H.* *Hedysarum coronarium* (French Honeysuckle), so far as we can determine from a seedling unflowered plant. It is scarcely a plant for growing in a pot, being better suited to the border of herbaceous perennials. The photograph kindly sent is not suitable for reproduction.—*Burles.* *Berberis vulgaris* and *Cestrum fasciculatum*.

PEARS FOR A WALL FACING NORTH: *J. R. W.* *Cattilac* for stewing; *Winter Nelis*, *Jean de Witte*, *Brown Beurre* or *Beurre de Die*. No variety is first-rate on a northern aspect. *Morella Cherries*, *Currants*, and *Gooseberries* are more valuable.

PELARGONIUM BLOOMS DISCOLOURED: *T. W.* The disfigurement and decay of the flowers are due to damp. These varieties succeed in a moderately dry, warm house, say of 45 to 50 by night, and 60 by day at this season, air being given whenever the days are mild. Drip from the roof and the slopping of water on to the floor and staging must be avoided as much as possible.

PELARGONIUM BLOOMS SPOILED: *T. E.* The result probably of a lowering of the temperature by the door being left open at night, and by fog being admitted. The bull's children were doubtless the culprits.

PELARGONIUMS: *C. J.* We cannot undertake to name the variety. You should take the blooms to some grower in a large way.

ROMAN HYACINTHS DISEASED: *V. Y. Z.* Bulbs are attacked by a bacterial disease caused by *Bacterium hyacinthi*. This disease is very contagious. *G. Massac.*

SCALE ON CURRANT STEMS: *Entomology.* The brown scale is *Lecanium coryli*, L. (= ribis, Fitch); the small white scales are the male puparia of *Climospis salicis*, L., and near them are the pyiform scales of the females. The Currant is a new food-plant for this latter species.

SOIL ANALYSIS: *E.* If you are a Fellow of the Royal Horticultural, or of the Royal Agricultural Societies, you can get your soil analysed at small cost.

SPENT HOES: *A. A. W.* In the fresh state spent Hops have no value as a manure, but fermented in a heap, with or without being mixed with stable-dung, and turned over once or twice, they become a useful manure for vegetables growing in light land.

SPOT ON GRAPE: *Decon.* In vineries where this fungus has attacked the fruit, it is a matter of prudence to use a fungicide as a preventative soon after the berries are set, and twice afterwards at monthly intervals. A safe one consists of 1 oz. of sulphide of potassium (dioxide of sulphur) dissolved in a gallon of water, and spray the Vines and bunches therewith. Every affected berry should be removed and burned.

THE LEAVES OF GRAPE-VINES SUDDENLY DROPPING: *Puzzled.* Without a thorough investigation made on the spot, we are unable to account for the occurrence.

TOMATO SEEDS: *W. P.* We cannot act as intermediary in matters of buying or selling. You should advertise in this journal. We have no right to divulge the name and address of a correspondent who chooses to write under initials.

VINES: *A. R. P.* The Vines are evidently very weak from some cause, and the sub-lateral growths more so than ordinarily. We think you should look to the condition of the border and the roots. Frost would not account for it. Excessive fruiting of any plant will not kill, although it may in some cases weaken a Vine it for a year or two.

ZONAL PELARGONIUMS WITH SPOTTED LEAVES: *Zonal.* The method of cultivation must be at fault, or the plants are constitutionally weak. As the "spots and lumps" are not the work of insects or fungi, it is impossible to advise without further information.

COMMUNICATIONS RECEIVED.—*J. Maers*—*H. B. M.*—*E. M.*—*A. W. E.*—*H. G. H.*—*Edmund P.*—*the Earl of A.*—*the Earl of D.*—*G. W. C. M.*—*F. W. B.*—*G. R. H.*—*Subscriber*—*H. S. W.*—*Geo. Mason*—*J. H.*—*G. C. T.*—*F. W. M.*—*T. S. H. C.*—*Secretary National Chrysanthemum Society*—*H. J.*—*J. H.*—*Deacon*—*S. Robinson*—*E. M.*—*A. C. A. H.*—*An Exhibitor*—*G. L.*—*G. F.*—*A. C. B.*—*J. C. C.*—*D. R.*—*H. W. W.*—*F. B. B.*—*C. H. A. B.*—*D. R. W.*—*Wild Rose*—*H. J. C.*—*F. T. M.*—*R. B. L.*

GARDENING APPOINTMENTS.

MR. JOHN BIRSE, for the last forty years Christchurch Grower at the Royal Botanic Gardens, Glasgow, as Head Gardener to ALEXANDER, Esq., Brentford Park, Stirlingshire.

MR. W. S. CHURCHILL, for two years Foreman at Mount Edgcumbe, Cornwall, and previously Head Gardener at the Manor House, Stoke, Devonport, as Head Gardener to J. J. MacANDEW, Esq., Lakeside, Leybridge, Devonshire.

MR. S. BIRDHELMAN, for three years Gardener at Berkin Manor, Hoxton, Slough, Bucks., as Gardener to ROBERT PROUD, Esq., Winton Hall, Great Chesterford, Essex.

MR ROBERT PICKER, Head Gardener to Mrs. PARSEY, Trevelyn House, Aberystwyth, Monmouthshire.

MR A. E. HAMBURIDGE, for the last forty and a half years Foreman at Gifford Park, Berwick, as Head Gardener to Lieut. Col. SHIRWAY, Grove House, Chiswick, Middlesex.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, risen 1000.

T R E E L E D.

Advertisements are received for the "Chronicle" circulated among COUNTY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS of home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is presented for reference to all the principal Libraries.

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



Hohenbergia populnea, HARDY EVERGREEN SHRUB, WITH WHITE FLOWERS, FROM THE BOTANIC GARDEN, TRINITY COLLEGE, DUBLIN.



THE Gardeners' Chronicle

No. 779.—SATURDAY, NOV. 30, 1901.

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TRINITY COLLEGE GARDENS, DUBLIN.

TRINITY COLLEGE occupies a large space almost in the centre of the city, and is pleasantly surrounded with trees and verdant lawns; but the botanical gardens in connection with the College, also ably presided over by Mr. F. W. Burlidge, M.A., are situated at Ballsbridge, about one mile from the College, but easily reached by tram from all parts of the city. Entering them from Pembroke Road, the visitor observes a long walk in front of him, with a wall to the left, facing south, and on which are many plants that invite close inspection. Amongst them a tall specimen of *Draecena australis*, which affords a tropical appearance to this part, which is materially heightened by several smaller specimens in close proximity; a fine plant of *Trachycarpus excelsus* (Chamerops), which has grown there for several years, and many younger specimens. Overhead is a tree of *Quercus cerris* var. *plumosa* of distinct appearance, the branches of which stretch out horizontally for a long distance; and close by stands a specimen of the large-leaved Lime, *Tilia*

tomentosa, syn. *argentea*: a fine plant of *Pittosporum* Mayii also deserves notice; and among plants of lesser growth, *Apera arundinacea*, syn. *Stipa arundinacea* (the Pheasant-tail Grass) must not be forgotten. The inflorescence when cut resembles a pheasant-tail in shape and hue. It is a useful grass for arranging with cut flowers in vases; it sows itself, and springs up again, but not too plentifully. On the wall I noticed a very fine plant of *Berberis fascicularis*, which is certainly worth extra care and attention on account of the beauty of its foliage. Plants of *B. glaucocarpa* and *B. nepalensis* were also doing well, as was *Rosa macrantha*. Close by, *Colletia horrida* had grown into a fine specimen and in another part of the garden *C. cruciata* was growing well, two strange and formidable-looking plants. Here is also a very fine specimen of *Arbutus hybridus* which I observed for the first time. The plant is intermediate in character between *A. Andriae* and *A. Unedo*.

The grounds were commenced early in the last century, and contain many Conifers of large size, as well as deciduous trees. I made a special note of an American Elm, a more graceful tree than the English Elm. A tree of *Pinus*, *Pinea*, the Stone Pine, is said to be the finest specimen in the United Kingdom; another *Pine* is sometimes given this name, and I was very glad to see it. This species, which is not by any means pointed.

A part of the garden is laid out in rectangular beds for furnishing botanical specimens to the students, and many interesting plants were remarked. In front of two greenhouses is a pond, whose surface was thickly covered with the leaves of *Marlia*'s varieties of Water Lilies, the banks forming ideal sites for *Gunnera manicata*, *Pampas Grass*, *Bamboos*, &c. A grand effect has been produced here by the use of a few distinct kinds of foliage backed up by tall shrubs and forest trees. In the greenhouses were plants of *Oxalis* *Origins* with bronzy leaves and yellow flowers, and some fine specimens of the Australian Grass-trees, *Xanthorrhoea*, with many other foliage and flowering plants in good condition too numerous to be mentioned here, and collectively abounding a pretty effect. Several of the newer varieties of *Nymphaea* were flowering in a rectangular tank where they can be readily inspected; some of the best were *N. odorata sulphurea*, very fine; *N. Ellisiana*, which Mr. Burlidge spoke very highly of; *N. Andreana*, *N. Marliacea rosea*, and *N. chromotilla*; *Trapa natans* and *T. verbanensis*, growing in a corner of this tank, the latter has very pretty red petioles. Two feet in depth of water is found to be sufficient for these plants.

Along the sides among some stones were *Androsace lauginoso* and *A. Leichlinii*, thriving as I have never seen them elsewhere; they evidently enjoy a fair amount of moisture. Plants of *Lobelia cardinalis* var. *Firefly* were thriving, and this variety is, I consider, a great improvement on the type. *Myrtille africana* is a rare shrub with bright green foliage; a native of the Cape of Good Hope, it seemed quite at home in a sheltered spot. One of the prettiest plants in the garden was *Sparaxis pulcherrima*, so light and graceful in appearance, that it is difficult to convey an idea of the plant in words. Mr. Burlidge aptly calls it

the Fairy Fishing Rod; it is of a pleasing shade of rosy-pink, 4 to 5½ feet high, with pendent campanulate flowers set on very slender stems, totally distinct from the ordinary species—it was growing out-of-doors, in peat soil. A wall in a shady situation furnished with "pockets" in which to grow plants, was prettily furnished with a variety of things, one of which was *Campanula isophylla*, flowering remarkably well. On a similar wall, erected in a sunny position, *Zauschneria californica* was also doing well, the bright orange-scarlet of this flower at once arresting my attention. The double *Calyptegia pubescens* was also remarked; it is a climber that should be more often grown in gardens. Does anyone know the single form of this?

A choice collection of Orchids, Ferns, fine foliage plants, and many other plants are grown in the houses, and Mr. Burlidge has every corner filled, both outdoors and under glass, with something of interest to a gardener. *Begonia* *President* Carnot was extra good, growing in a heap of turves, like those used in growing Cucumber plants; another *Begonia* not often seen, *B. Haugiana*, which is similar to *B. metallica* but larger with flowers, is worthy of general extensive cultivation. Many decorative plants are grown for use at the College on special occasions. Two plants must be mentioned for the excellent scent found in their leaves. These are the Chilean Bay (*Laurelia aromatica*) and the wild Lemon. An exotic Dodder, *Cuscuta reflexa*, growing in one of the houses had escaped through the ventilators and looked very curious; it was growing on some lily on a north wall. I must not omit to mention some very fine plants of *Thorium tenax* and *P. Colensoi* in various parts of the garden, the latter being much the hardier plant. It was obtained originally from Powerscourt, where a quantity of it was grown for ornamental planting. As seen here it is worthy of extensive planting in the warm parts of the country on account of its distinct appearance. *W. H. Druce*.

NEW OR NOTEWORTHY PLANTS.

From Mr. Max. Leichlin come specimens of new plants for determination. The first is a new species of *Aster* from Hazara in N.W. India, of which Mr. Spencer Moore kindly furnishes a description.

ASTER SUBCERULEA, sp. nov. S. Moore.

Herbaria, erecta, caule subterre in limbitudine eximo striato sparsis pilis; foliis sessilibus oblongo-oblancoatis utroque obtusis inferius vel raro medio deiculis pilis strigulosis appressis praecipue supra obtusis in sicco late viridibus; capitulis magnis solitariis pedunculatis; involucri sub hemisphaerici basi impressi phyllis 5-6-natis lanceolato-oblongis acutis margine ellipticis herbaceis basin versus deorbatis; radio flosculis circa 50 heads involucrum magis proe- excedentibus oblancoatis obtusis dorsum longiuscule attenuatis subocrotis; acheniis oblongis compressis facibus 2-costatis pubescentibus; pappi setis circa 12 quam achenia brevioribus scaberrimis. Achenia 6-9-10 mm. long. (summa vero insigniter immutata), diametro abaxiali circa 1.5 mm. lat., nervi laterales 2 nervi centralibus usque ad medium folium arcte approximatis ligue paralleles. Pedunculi circa 1.0-4.0 mm. long., raro 6.0 mm. attingentes, pilosuli. Capitula expansa 15 mm. diam. Involucra phyllis 5-6 mm. long., summa 0.2 mm. lat., ligula late 2.0 mm. long., sursum 0.3 mm. lat. Achenia 0.25 mm. et pappi setae 0.15 mm. long.

Apparently named in honor of the late, but different from it in leaf-shape of involucral leaves; pale blue, not purple ray-florets; different pappus, &c. S. Moore.

BYSSOUS OFFICINALIS, L. VAR. *GRANDIFLORUS*, Rendle, var. nov.

A striking form, characterised by the diffuse habit of the flowering shoots and the lax arrangement of the partial inflorescences, but especially by the large, open flowers. The measurements of the floral organs are as follows:—Calyx 9 mm. long, including the shortly aristate teeth (3 mm.). Corolla-tube 1 cm. long, the lower slender cylindrical part 7 mm., the bifid posterior lobe of the corolla 5 mm. long by 3.5 mm. broad, the anterior 7.5 mm. long from the base to the centre of the broadly emarginate, spreading mid-lobe; the mid-lobe 1 mm. long by 1 cm. broad, the lateral lobes barely 2 mm. long, by little over 2 mm. broad. Posterior stamens 13 mm. long, anterior 14 mm. Nutlet (barely ripe) slightly pubescent at the apex, 2.5 mm. long. The leaves are narrowly linear-lanceolate, and highly glandular. The whole plant is glabrous. Hab., Lake Baikal.

Mr. Max Leichtlin also sends a *Mertensia*, which, though a finer plant, is, I think, inseparable from *M. primuloides*. The specimens are about 4½ inches high; the leaves reach 4 to 5 cm. in length, and have a slender stalk exceeding and passing into the somewhat oblong blade. The corolla tube reaches from 12 to 15 mm. in length, and the spread of the limb in the dried specimens reaches 1 cm. The corolla, when dried, is of an indigo-blue colour, but when fresh said to be Prussian-blue, with a white centre and a yellow eye. There is a precisely similar specimen in the Kew Herbarium from Lazara, N.W. India.

From the same source also come a *Codonopsis*, from Lazara, which is certainly *C. ovata* (Benth.); and an *Adenophora* from Central Asia of doubtful appearance, of which further specimens are required. *A. B. Rendle*.

PERENNIAL ASTERS.

The Starworts or Michaelmas Daisies form a most interesting class of plants, but being hardy, and growing freely under almost any conditions, they have not received the attention they deserve. In addition to the number of distinct species there are many garden varieties, and there is evidently scope for further improvement; in fact, there are few classes of plants which afford better material for the "hybridist." It is only recently that this fact seems to have been recognised.

Perhaps few better displays of these old-time flowers have ever been made than was seen at a recent meeting of the Royal Horticultural Society, when they were shown as pot-grown plants, the plants being taken up from the ground. It is unnecessary to say much with regard to culture, except that by dividing the plants annually, manuring the ground, and giving them plenty of room, they continue in flower much longer and make a finer display—and some of the varieties are well worthy of a place as pot-plants for decorations. Useful as they are as cut blooms they do not last so well as when the plants can be used. It is only a limited number of varieties that I should recommend for pot culture, and these are mostly of the Nova-Anglie and Novi-Belgie types; the latter afford the greatest variety, and keep up a longer succession of bloom than any other class. For pot culture, they should be started with a single stem; cuttings or off-shoots taken off early in the year will make large plants by the autumn. They cannot be flowered well in less than 8-inch pots, and where convenience will allow, larger ones may be used. The chief thing in pot-culture is attention to affording water;

it will be found that the strong-growing sorts take up water freely, and it would be difficult to over-water them—but they are more liable to suffer for lack of water than from any other cause. Even when grown in the open ground, they suffer in dry weather, the roots not penetrating so deeply as many other subjects; and though they will live through any hardships, they will make a much finer display if a little attention can be given them, especially after they begin to form their flower-buds. A good soaking with water and then a mulching of manure will be very beneficial.

The necessity of replanting cannot be too often repeated, for where a collection is planted together, the stronger-growing varieties will destroy the weaker ones, if not replanted and reduced in size; and where the blooms are left to form seed, the seedlings spring up in all directions, and this is the chief cause of the difficulty in their nomenclature. The foliage is variable at different seasons, and even the flowers vary considerably; those which come from the young ground-shoots are often quite distinct from those on the main stems; there is also considerable variation in regard to heights.

No better opportunity could be had of judging the relative merits than the extensive collection grown by Mr. H. J. Jones of Lewisham, the source from which these notes were prepared. Mr. Jones has procured stock from every available source, and has given them his personal attention. Nearly the whole of the varieties have been grown in pots, and also in the ground. In many instances those grown in pots came into flower earlier than those in the ground. I should mention that all the pot-grown plants were grown from single stems, most of them having been propagated from cuttings early in the year. In addition to the stock of named varieties, Mr. Jones has grown a number of seedlings, and has selected several which appear to be quite distinct advancements. He has also done some hybridising, so we may hope for further improvements another season. *A. Hemslley*.

(To be continued.)

THE ROSARY.

PREPARING FOR THE WINTER.

THERE are many who, stimulated by the splendid blooms they have seen during the past summer, may be desirous of enrolling themselves amongst the enthusiastic Rose cultivators, and want to know how they are to do so. So much has been written, printed, and distributed by the National Rose Society, the horticultural press, and others interested in Roses, that it may seem to be a waste of words to add to all that has been written, and yet I am constantly receiving letters from persons who have access to these various sources of information to know what they are to do. I think that all this arises from the fact that gardens are so varied in their character, situation, and soil, that the owners often want special information as to how they can best attain their object. Soil has, of course, a great deal to do with success, but climate still more, for with the former you can come to conclusions and regulate your garden according to its necessities. It has now become so much the fashion to have Roses budded on the Seedling Briar, or Briar cutting, that most persons ought to know what soils suit those stocks the best. The Dog Rose likes a strong heavy soil, and the Manetti rejoices in one much lighter, and being much stronger and grosser in its growth, it is well

adapted to vigorous and strong growing varieties, but is not for the more delicate growing varieties like the Teas. There is one mistake which is sometimes made with regard to the formation of a rosary. Persons are enjoined to make it in a sheltered position, but this does not imply that it is to be anywhere under the shade of trees. I recollect being shown a Rose-garden in one of the great historic homes in the midlands, and the gardener complained that his plants would not bloom well, and were much infested with mildew. When I saw its position I did not wonder at this; it was surrounded by large Elm-trees which effectually shaded it from the morning sun, and consequently its growths were drawn and sappy, while the flowers were of very poor quality.

The Rose likes fresh air, and prefers even cold winds to a close and muggy position. I would therefore say to those persons who intend to form a rosary, choose an airy situation. Another point to be determined is, the purposes for which Roses are wanted. Are they for exhibition, or for the owner's gratification at home? It may perhaps be asked: Would not these require to be quite similar? No, must be the answer, because there are some which the exhibitor would not care to be without, but which would only cause disappointment to the ordinary grower. Take, for instance, one of the grandest dark-coloured Roses, *Horace Vernet*, it can only be had in perfection from maiden plants no matter on what stock it may be budded; but anyone who has seen the grand blooms of it exhibited by Mr. Lindsell and Messrs. B. R. Cant & Co., are often tempted to run the risk, although they know that disappointment must await them afterwards. The same may be said of other Roses, such as *Viscountess Folkestone*, that fine hybrid Tea, but a poor grower, and short-lived; and also of *Lady Mary Fitzwilliam*, which only an exhibitor would care to grow. But after all, the subject which should most interest Rose-growers at this season is, are there any new Roses which ought to be added to my collection, and if so, what are they? Now, a season in which the National Rose Society has awarded four Gold Medals ought surely to have something which any Rose-grower would desire to add to his collection. Some of these Gold Medal Roses will not be distributed this autumn, but with all that, there are many novelties which are worthy the consideration of the rosarian.

There are several sources amongst our own Rose-growers from which we regularly expect something novel; and these are mostly old-established, well-known firms, whose names need not be mentioned here.

It was natural to expect that the attractiveness of *Crimson Rambler*, though many did not care for its colour, would draw the attention of the hybridiser; and perhaps the most successful cross has been with *Rosa polyantha simplex*, the novelty *Queen Alexandra*, a variety combining the floriferousness and rampant growth of the parent with flowers of a pleasing shade of pink. This variety obtained the gold medal of the National Rose Society at the Temple Rose show, and as a pillar Rose will, I doubt not, be much valued.

Tea Roses have received a good deal of attention, and there are several which it would be well for growers to add to their collection, as, for instance:—

Corallina has been seen and awarded at the Drill Hall, receiving an Award of Merit; it is deep crimson, shaded with coral-red, especially beautiful while in the bud, strong-growing, and a fine autumn bloomer.

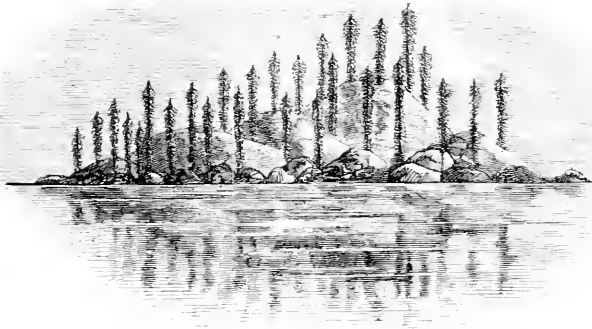


FIG. 116.—ARAUCARIA COOKII UPON ISLET OFF NEW CALEDONIA.

Then there is:—

Mrs. B. R. Cant.—I can speak with a good deal of confidence of this Rose, as I have had it in flower in my own garden: the flowers are of a deep rose colour (in the autumn quite a rich red), the inner petals being soft silvery-rose, slightly suffused with buff at the base; the foliage is very attractive, being of a deep rich blue green—it is a good autumn bloomer, and very strong in growth. It obtained a Gold Medal at the Temple Rose Show, and an Award of Merit of the Royal Horticultural Society.

Robert Scott.—A Rose of American origin, of which rosarians seem to think very highly.

Duchess of Portland (H.T.), which was awarded a Gold Medal by the National Rose Society, and is a Rose of great beauty, pale sulphur-yellow, full, large, and of perfect symmetrical form.

Lady Moya Beaulere (H.T.).—The colour is unique, being a rich bright Madder Rose, with silvery reflexes.

Mildred Gout (H.T.).—This very fine Rose is silvery-white, the edge of the petals shaded and bordered with pink; it is perfectly formed, and the flower of good substance, and consequently remains long in perfection; the raisers consider it to be the best Rose that they have raised.

Mamie (H.T.).—This fine Rose, originally known as Mrs. Conway Jones, is of a rosy-carmine colour, very free flowering, blooming early and late, very fragrant.

Lady Baltimore (H.T.) has been frequently seen during the past season, and was specially in evidence at one of the meetings of the Horticultural Club, when it was greatly admired. There is no doubt that it is a garden Rose of grand quality; the flowers are of moderate size, not quite full, and possibly it may be at times a good exhibition Rose. The blooms are of a light rosy-crimson; the bud has an orange tinge which it retains when the flower is open; the blooms appear singly, and

on a long footstalk above the foliage. There are some other new Roses such as Lady Roberts and Ben Cant, but as they will not be available until later on, it would be useless to mention them for this autumn planting; and in thus indicating those new Roses which I think might be added to any collection, I may have a few words to say about the preparation of the beds for the dull days of winter. *Wild Rose.*

ARAUCARIA COOKII.

We have on former occasions given illustrations of this species as growing in its native country, New Caledonia (see fig. 116), when it resembles the mutilated Elms so common near London, in which the side branches are removed periodically, while the crown is allowed to remain. The result is a thicket of short lateral shoots all up the stem, and a restricted crown at the top.

Our present illustration (fig. 117), from a photograph by Mr. Wallis, for which we are indebted to Mr. Watson, the newly-appointed Curator of the Royal Gardens, Kew, shows the crown of a tree now 20 feet in height, in the temperate-house, which is bearing cones that are subglobose in form, and bristly with the projecting tips of the scales. The foliage consists of small appressed leaves, like so many lizard-scales. The tree at Kew was presented by the Duke of Roxburgh in 1812. Figures of the tree will be found in the *Journal of the Horticultural Society*, vi., p. 268; in the *Botanical Magazine*, t. 1635; and in our columns, January 20, 1877, p. 86, 87.

WINTER ACTIVITIES.

THE gardener has not an attractive environment at this season of the year. The once lustrous leaves, unless in the special and somewhat rare instances of Laurels, Hollies, and other Evergreens, have fallen from the trees; the Roses, which flowered well into November, have ceased from their activities—they have found, not prematurely, their period of repose. But the nature of the ardent horticulturist does not partake of this well-merited rest. He is active in the present, because he is thinking of, and providing for the future. Many precious plants, many bulbs full of embryonic energy and beauty, must carefully and seasonably be inserted in the soil (whose nature must also fulfil their requirements), if spring is to be a veritable series of floral pictures; of Snowdrops, Crocuses, Chionodoxas, brilliant Tulips, and fragrant Narcissi; if summer is to be made memorable with the splendours of the Lily, and the glories of the Rose. The latest and most beautiful varieties that can be acquired must be added to his possessions, however extensive, or he is not content. Doubtless he is not, if a wise individual, altogether regardless of expense; there are many treasures for the garden which, by reason of their almost if not absolutely prohibitive prices, he cannot as yet afford to acquire; but he knows from experience that in a few years even those envied creations of the florist and rosarian will come within his reach.

The amateur gardener is, like Goldsmith's Whang the Miller, "naturally avaricious;" he is never contented with such things as he has; he has often much that is beautiful and consoling in his garden, but he would like to have more—and such horticultural ambition is quite pardonable, provided it does not eventually make him a mere miser, who would not part with anything valuable he possesses, even to his dearest and worthiest friends. It



FIG. 117.—TOP OF ARAUCARIA COOKII, AS GROWING IN THE TEMPERATE-HOUSE, KEW.

is especially in late autumn or early winter, when the catalogues seem to come to us with those desolating blasts which, in the expressive language of Robert Burns, "make fields and forests bare;" and when, turning over their marvellously artistic pages, we come upon bright pictures of far-distant vernal and summer beauty that gladden the waste places of the Nature-loving heart, it is chiefly then that the horticulturist experiences that unquenchable desire for enlarging his "collections," to which I have referred. There is really, under such stimulating conditions, no possible limit to such avarice as his. If to Wordsworth the mearest flower that lived could give thought that often lay too deep for tears; and to the amateur gardener the latest "incomparable" Narcissus, however inferior to his own Emperor and Empress, or the Rose of faultless loveliness most recently propagated, though not of greater beauty, and probably less vigorous than his Duke of Edinburgh or Margaret Dickson, if they cannot at once be acquired by this ardent cultivator, relegate his patience to the regions of despair.

While thus constantly adding to his garden possessions, the earnest horticulturist cannot be inactive at any season of the year. They are by no means the most assiduous of gardeners who are the most intensely conservative; who do not linger and thirst (mentally) for the latest acquisitions in the exquisite departments of flowers and fruit; for they, by reason of this very conservatism, which often arises from mere indolence or prejudice, do not exert themselves too much. Horticulture, if it is to be widely beneficial, or greatly inspiring, must also be progressive; ever reaching upwards unto loftier heights. Nothing can be more impressive to the student of Nature as thus glorified by art than the gradual evolution, through hybridisation, of the Narcissus, the Chrysanthemum, the Dahlia, and the Rose; and he who contents himself with the possession, in many instances indolently derived from his ancestors, of the older and more primitive forms of these, does not know what human energy, combined with mental genius, whose constant friend is perseverance, has accomplished for mankind.

Nature herself is more active at this season of seeming repose than can ever by any possibility be apparent to those who desert their gardens during the winter months. The process of root-production, generative of future vegetative energy and consummate floral beauty, is progressing without intermission underground. In sheltered regions, the fragile stems of the Snowdrop, that annual revelation of ineffable purity, already appear; while *Jasminum nudiflorum*, calmly shining in the heart of atmospheric tribulation, is in radiant bloom. *David R. Williamson, Kirkcaldie Mause, Wigtownshire, N.B.*

HOW TO COPE WITH LOCUSTS.—In the report of the Administration of Rhodesia for 1898-1900, Part V., p. 368, we find the following reference to this subject:—"Dr. EDICHOX has rendered a further service to the colony by the systematic application of a poisonous fungus to the destruction of the devastating swarms of locusts. The remains of insects which have died from the disease are dried, powdered, and mixed with water; young living specimens are then washed with this solution, and are set free to contaminate the swarms. The locusts, when followed up, are found to perish in large numbers, and the fungus is to be seen growing out of their bodies. This toxin is also cultivated separately, and is supplied to natives and colonists in tubes."

VEGETABLES.

LATE-CROPPING PEAS.

TESTS of varieties made in one garden only cannot be accepted as conclusive, more especially if the soil be hot, shallow, and gravelly. Moreover the weather has a great influence on the cropping capacity of the plants. In the following notes is embodied my experience in regard to late Peas in gardens, as far removed from each other as those of Syon (Middlesex) and Alhwick Castle, Northumberland. I have the same varieties of Peas growing at Syon and at Alhwick Castle, and in the former garden they are very poor, and at the latter really splendid. A light gravelly soil, like that of Syon, is not good for late Peas, of which the Royal Horticultural Society's Gardens at Chiswick furnish another good instance. No one could have wished for better samples than the early Peas, and even mid-season crops were fine; but the later ones were not nearly so good, and there was the best of the late varieties grown. Heat and drought are fatal to crops of late Peas in this part of the country, no matter how good the treatment. In gardening generally, and in kitchen gardening in particular, the cultivator has to adapt his practice to circumstances. When I came to Syon, I was very loth to discard that fine Pea Veitch's Perfection, one of the best wrinkled narrows grown; for in the midlands it was our best Pea in July and August, and having a large establishment to provide for, I used to grow it in quantity. At Syon it proved quite a failure when sown to crop during those months.

A newcomer in the district asked my advice concerning late Peas, and I told him not to sow too many varieties, to put most reliance on early Peas; advice which, I believe, was not much liked, the questioner being an amateur, who had a large garden. He did not follow my advice, and now complains that he has not had a bushel of pods from half-a-dozen rows. In the gardens at Alhwick Castle, the plants of the same variety are covered with pods down to the ground, and showed bloom at the same time. The variety is Autocrat, which is a splendid Pea for the cooler north, the production of pods being two months later than at Syon. It is a well-known variety, partaking of the *Xe Plus Ultra* type. At Syon, *Xe Plus Ultra* cannot be relied on to produce many pods after the month of July, which is a great drawback. Peas being desired as late in the year as possible. As regards good quality it cannot be excelled.

In order to obtain Peas late in the year, various means have been tried, but these have been more or less failures. In a Staffordshire garden I had no difficulty of this kind, fine crops being produced when the plants were afforded ample space.

Another excellent Pea that does very well in the north when sown late is Sutton's Continuity. The pods, of a deep green colour, come in great abundance, and in pairs, and they are blunt-ended, and the plants not unlike in growth to that of a dwarf *Xe Plus Ultra*; the peas are of a capital flavour, and the plant has a strong constitution—altogether it is a fine late Pea, and one that will bear for a considerable space of time.

Another very fine variety and equally good as a cropper and for quality, is Royal Jubilee, an earlier Pea than Continuity, but good for preceding the latter. I have not tested it at Syon, but there can be no doubt as to its value if sown for coming in late in

the summer in gardens where late Peas are a success. In the north the variety Late Queen is a favourite Pea, a very distinct variety, and one that is the equal of *Xe Plus Ultra* in regard to flavour, and growing 3 to 4 feet in height. I remarked last year that it was free from mildew right into the month of October.

No note on late Peas would be complete without mention of Carter's Michaelmas, one of the best late Peas. The variety is appropriately named, it being really good at Michaelmas. The haulm is of medium height, and good habit, and at Alhwick it bears pods abundantly well into the present month. There is no lack of good late Peas, but unfortunately it is not everyone who succeeds in growing them well. *G. Wythes.*

PEAS IN 1901.

Considering the very dry summer, Peas did well in this garden. The earliest here was English Wonder, a variety which cropped most abundantly. The plant is not quite so hardy as American Wonder, but it is to be preferred to that variety, as being of superior flavour. My early Peas are sown on a south border in the month of December, and in favourable seasons the first picking is about the middle of the month of May. Gradus, May Queen, and Sutton's Giant follow in succession—the three, Gradus being earliest; Sutton's Giant, a very fine Pea, a few days later. These three varieties are well worth growing to succeed English Wonder. Respecting new Peas that I have grown, and which have done well, I may mention Glory of Devon, a fine Pea which I have tested for two seasons, and believe it to be one of the best, if not the best, of recent introduction in regard to crop, hardiness, resistance to mildew and drought, and in flavour equal to Goldfinder, which is an older variety, sent out by the same firm as Glory of Devon. Others I may mention are British Empire, a very distinct Pea, about 2 feet in height; haulm and seeds of a very deep green colour, a good cropper, with the pods in pairs. I think this Pea will gain in general estimation. The variety Mansfield Show was almost a failure this year, but it may be better another year. Older varieties were Masterpiece, an excellent Pea, having very large pods, suitable for exhibition, but not such a great cropper as some others. Large pods do not always afford the greatest number of Peas. The Autocrat type of Pea is better in that respect, viz., Goldfinder and Captain Cuttle; this last a splendid Pea for sowing late, bearing well in October, as does Autocrat. *F. Q. C., Lifton Park Gardens, Devon.*

BULB GARDEN.

HYBRID MONTBRETIAS.

As a consequence of my saying in a note to the *Gardeners' Chronicle* on mildew, that I had learnt by experience a good deal about the cultivation of Montbretias, I have received several letters asking me to give others who want it the benefit of what I have learnt. In the first place, as regards their hardiness, I often see it stated that they are absolutely hardy, but I have several times known them to be killed outright by frost, both in my garden and in others. I cannot say how many degrees of frost the corns will endure, but it the young shoots are frozen hard down to the corn, no new shoots will be formed. M. Lemoine, years ago, warned me that in the climate of Nancy even the hardy type M. Pottsi requires in winter the protection of at least a foot of litter over the surface, but no

doubt the extreme winter cold of Nancy is generally much below that of London.

I find two common complaints about Montbretias. First that when bought the corms will not start into growth, and secondly that they increase so fast as to be unable to flower. My chief trouble, the stalks turning brown and withering prematurely, seems less prevalent with others. Montbretias and Tritonias (Crocosmias) are said to grow at their home in moist, almost boggy ground. Before the flower-stalks and leaves are dead, new shoots

sulphide of potassium, half an ounce to a gallon. Any refuse soil, without crocks to drain, will do to fill the pots, which are then watered and placed together in some sheltered spot under trees, and covered with light soil, ashes, or any such material, to a foot over the top of the pots; this covering material to be added to in the event of long and hard frost, but they must not be protected against rain or snow, as it is essential to keep them moist. About the end of March or beginning of April they are planted out, the

and separate as many as I want in spring, planting them in threes about the borders—but leaving them for two or three years to become united forests of green leaves is always to be avoided.

I am asked to name the best kinds, but they vary much in constitution and quickness of increase. The types Pottsii and Crocosmiaeflora multiply too fast to flower well. Pottsii grandiflora, in spite of its name, has small flowers, scarlet outside, yellow inside, very free, seed-heads ornamental, and habit vigorous. Etoile de Feu, scarlet, is the best of its kind. Bouquet Parfait and Feu d'Artifice, for mixed yellow and red. For ochre-yellow with dark eye there is Tigridie, a grand, tall, robust variety, perhaps the largest of all. Golden-yellow are Gerbe d'Or and Drap d'Or; pale yellow are Solfatare (Lemoine spells this name right, and nearly all English catalogues and writers wrong), and Sulphurea germania, a very large flower I have only seen, but it is to be recommended if robust. The above I consider the best, but I have grown at least thirty varieties, and many others are good. Distinct from all these are two varieties of the old Tritonia (now Crocosmia); and the latest change seems to be Montbretia, see *Index Keicensis* aurea, called imperialis, with very large flowers, and broad imbricated, orange-coloured petals; and maculata, with flowers as large, but narrower petals, and a dark brown spot on each. These are less hardy than the hybrids, and make longer underground shoots; they are later to flower, and are more pronounced bog plants. They do very well left alone in a bog-bed if well littered against frost, and are excellent conservatory pot plants for autumn. In planting out Montbretias, I avoid the exact spot where they have grown before. The best situations and soils in each garden must be found by experience. C. Wolley Dod, Edge Hall, Malpas.

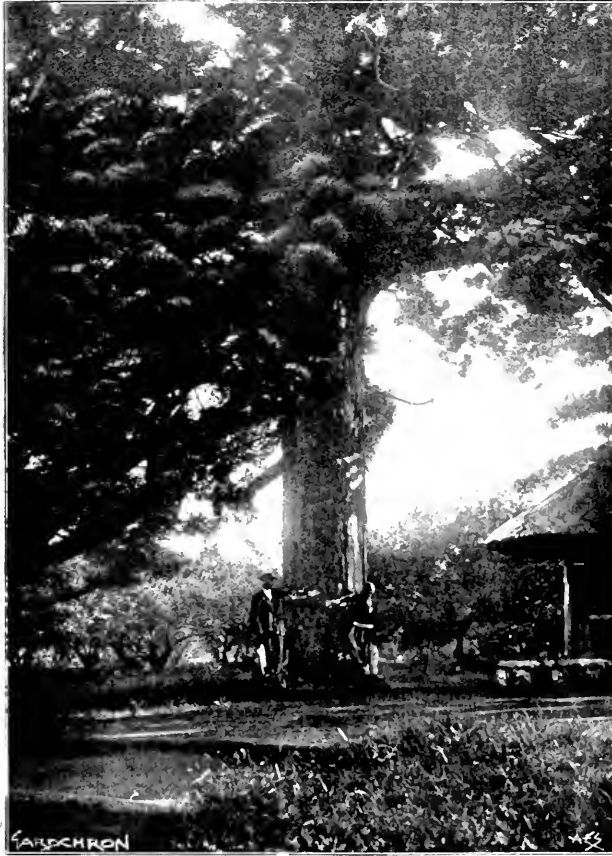


FIG. 118. CRYPTOMERIA JAPONICA, NEAR YOKOHAMA.

CRYPTOMERIA.

We are indebted to Mr. Unger, of Yokohama (Rehmer & Co.), for the photograph of the fine Cryptomeria shown in fig. 118.

In this country the Cryptomeria is very handsome in the young state, but as it gets older it is apt to become more or less brown and unsightly. A very common peculiarity is the prolongation of the axis beyond the cone in the form of a slender branchlet.

There are numerous varieties of Cryptomeria in cultivation, some of which, like the form called *C. elegans*, is only a stage of growth of *C. japonica*. Its foliage assumes a bronzy-brown tint in autumn, as do some of the Thuyas and Retinosporas (*Cupressi* sp.). *C. Lobbi* gardens is a robust form with straighter leaves. Then there is a fasciated form, and one with spirally-twisted leaves. We have a specimen whereon the leaves on one of the branches are spirally-twisted, while on the other they are straight.

The leaf structure is much the same as in the Hemlock Spruces (*Tsuga*), especially in the possession of one large resin canal in the middle of the under surface, beneath the fibrovascular bundle.

Cryptomerias once grew in this country in Eocene times, so that we are but growing as an exotic what once was a native; and we are growing as a comparative novelty, introduced within the memory of those now living, a tree of untold antiquity in our own islands!

What the tree looks like in Japan we may gather from the *Forest Flora of Japan*, by Charles Sprague Sargent.

The most generally planted timber-tree of Japan is the sugi, *Cryptomeria japonica*, and its wood

are generally thrown out by the corm. If these are either dried up or broken off, the corm becomes useless. It is therefore of great importance that they should not be kept out of the ground, and that they should always be obtained as early in autumn as possible, and planted at once. The routine work I follow is this:—About the end of October or beginning of November (later would do, except that the new shoots are liable to become longer than convenient), I get say 100 5-inch pots; into each of these I put about three corms, which make about ten shoots in all for a pot. I generally, before potting, dip them overhead, including the tops, which must never be cut till spring, in a bucket of solution of

corms being put 6 inches deep. There is no advantage in trying to retain in planting a ball of soil, they grow just as well without it. Provided the border where they are planted does not dry up with sun or the shelter of trees, it makes no difference whether loam or leaf-mould or peat is the prevalent material, but I avoid sand; feet in moist shade and head in bright sun, is what they like best. Amongst dwarf Roses, or amongst mixed herbaceous plants, they do very well. I do not limit myself to the 100 pots mentioned, which are intended as a stock in the event of a severe winter. I plant many large clumps, 100 corms or more together, a foot deep in heaps of soil in sheltered places for the winter,

is more universally used throughout the Empire than that of any other Conifer. It is one of the common trees of temple gardens and roadside plantations, and when seen at its best, as in the temple groves of Nikko or Nara, where it rises to a height of 100 or 125 feet, with a tall, shaft-like stem tapering abruptly from a broad base, covered with bright cinnamon-red bark, and crowned with a regular conical dark green head, it is a beautiful and stately tree which has no rival except in the Sequoias of California.

"Japan owes much of the beauty of its groves and gardens to the Cryptomeria. Nowhere is there a more solemn and impressive group of trees than that which surrounds the temples and tombs at Nikko, and the long avenue of this tree, under which the descendants of Toyami travelled from the capital of the Shoguns to do honour to the burial place of the founder of the Tokugawa dynasty, has not its equal in stately grandeur. This avenue, if the story told of its origin is true, can teach a useful lesson, and carries hope to the heart of the planter of trees, who will see in it a monument more lasting than those which men sometimes erect in stone and bronze in the effort to perpetuate the memory of their greatness. When the body of Toyami was laid in its last resting place on the Nikko hills, his successor in the Shogunate called upon the Daimyos of the empire to send each a stone or a bronze lantern to decorate the grounds about the mortuary temple. All complied with the order but one man, who, too poor to send a lantern, offered instead to plant trees beside the road, that visitors to the tomb might be protected from the heat of the sun. The offer was fortunately accepted, and so well was the work done that the poor man's offering surpasses in value a thousand fold those of all his less fortunate contemporaries."

In Mr. J. H. Veitch's *Traveller's Notes*, frequent mention is made of this tree, and a fine illustration of the grove at Nikko is given at p. 133 of that volume.

NOTICES OF BOOKS.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.

THE May number of this useful publication gives excellent illustrations, descriptions, and other details of the following, the genus *Rodriguezia* being commenced:

Rodriguezia decora.—Introduced from Brazil in 1851. The plant is of scandent habit, bearing in winter and spring sprays of white flowers, spotted, except the front of the lip, with purple. An old inhabitant of our gardens, more commonly known as *Burlingtonia decora* and *B. picta*.

Cattleya Hardyana var. *alba*, Rolfe.—Sepals and petals white, lip as in the typical *C. Hardyana*. The plant figured flowered with M. Peeters, Brussels.

Cattleya Eldorado var. *Wallisii*, Rand.—Flowers white, with yellow disc. Several of this variety usually flower out of every importation of *C. Eldorado*.

Cypripedium Swinburnii, O'Brien.—A showy hybrid between *C. Argus Moensii* and *C. insigne Maulei*, raised in the Swinburne collection, now dispersed.

Dendrobium Pierardii, Roxbury.—One of the commonest of *Dendrobiums*, but very handsome in fine specimens if grown in baskets, and suspended. The long pseudo-bulbs are pendulous, especially when profusely furnished with bloom. As is often the case with drooping Orchids, the picture is made to appear upside down by the name being placed at the wrong end.

Dendrobium barbatum, Lindley.—A pretty species, with upright spikes of white flowers with yellowish centres. First imported into England in 1811. The specimen figured flowered with Sir Trevor Lawrence, Bart.

Calanthe vestita var. *Stevensiana*, Hort.—Imported by M. Regnier from Cochin China in 1883, and distributed as *C. Stevensiana*; it also appeared among imported *C. Regnierii*, and has been named *C. Regnierii Stevensiana*.

In this case it is made a variety of *C. vestita*, and probably typical *C. Regnierii* would be dealt with in the same manner. Botanically, there is little to separate it from *C. vestita*; but for garden purposes, *C. Regnierii* is so distinct from that species that it is more convenient to keep it apart, especially as it has a wider range of variation in itself than typical *C. vestita* has. Flowers white, with reddish-rose labellum.

Lilia flava var. *aurantiaca*, Hort.—An orange-coloured form of the yellow *L. flava*, which flowered in Lord Rothschild's collection in 1895. The plant illustrated was flowered by Sir Trevor Lawrence, Bart.

Lilia rubescens, Lindley.—An old Mexican species, introduced in 1829, and more generally known in gardens as *L. acuminata* and *L. peduncularis*. Flowers white, slightly tinged with rose; disc purple on primrose-yellow ground.

Odontoglossum × crispo-Harryannum var. *scutellabile*, Cogniaux.—Sepals and petals heavily blotched with purple on a greenish ground colour; lip white, with rose-purple markings on the basal half.

Odontoglossum crispo-Harryannum var. *omnium*, Cogniaux.—Sepals and petals primrose colour, spotted except the tips with purple; lip white, with fine rose-purple markings.

Odontoglossum tentaculatum, Reichenbach, fil.—Sepals and petals yellow, blotched with brown; lip cream-white, with a purple blotch in the centre. Probably a hybrid of the *O. milus* section.

Selenipedium caudatum var. *Wallisii*,—A well-known large, light-coloured variety.

Vanda coralina, Griffith.—Discovered by Griffith in the forests of Burma, 1837, but not in cultivation till Col. Benson sent it in 1867. Flowers blue. The specimen figured flowered with Sir Trevor Lawrence, Bart.

LILIES FOR ENGLISH GARDENS: A GUIDE FOR AMATEURS. By Gertrude Jekyll. (*Country Life* Office, Tavistock Street, Covent Garden).

THIS is a little treatise, nicely got up and beautifully illustrated. Its text is based upon replies obtained in response to a circular sent out to certain readers of *The Garden*, and upon the author's own experience. We should have been glad to have had more of the latter and less of the former. Anyone who turns to the account of the White Lily, and reads the extraordinarily conflicting evidence as to the proper mode of culture of this most lovely plant, will find that in the multitude of counsellors there is [no] safety. Therefore "counsel is but vain," and we may say to the amateur, "*Caveo* be thy counsellor." The report of the Lily Conference is not yet published, or it would have furnished abundance of matter, abstracts of which have indeed already appeared in the horticultural press, which might appropriately have been utilised, as well as the stores of original information given in our own columns. The book is professedly "an amateur's handbook, a simple guide to those who wish to grow Lilies in English gardens." We are, therefore, not to expect details which are purely of botanical interest. Still, those who wish to grow Lilies require some information as to the structure of the bulbs, the nature of the roots, and the varying manners and customs of the several species. Chapter xvi. of the volume before us will illustrate our meaning, and shows that the author has not altogether overlooked these very important matters. The most brilliant patches of green

in the border at this season are furnished by the leaves of the common White Lily. When other Lilies are resting (or rather hard at work) below ground, this one is still manifesting great leaf activity above ground. What does this mean? Does it behave like this in its native country? Surely, if we had an answer to these questions, we should have a clue to the treatment they require at our hands in the garden. The so-called double White Lily is not mentioned under *Lilium candidum*, though it is a very old inhabitant of our gardens, and though highly curious, is not devoid of beauty when properly developed. Miss Jekyll elsewhere speaks of it as a "wretched, misshapen thing, not worth growing," to which comment we should add "that depends." We have often seen it ugly and misshapen, but we have occasionally seen it stately and attractive, even in a London garden.

The chapters which impress us most are just those wherein the author writes from her own experience, such as chapter vii.—Some beautiful ways of growing Lilies; chapter viii.—Lilies in the Rock-garden; chapter ix.—Lilies in pots for outdoor culture; chapter x.—Lilies as cut flowers. The final sentence of the volume is rather suggestive of a dose of medicine, for it contains a formula for the preparation of the Bordeaux Mixture, in which the copper sulphate and the quicklime are recommended to be used in equal quantities, but if the lime employed be quicklime, a lesser quantity suffices. Lily-growers and Lily-lovers will find it to their interest to procure this attractive little volume.

FORESTRY.

AVENUE PLANTING.

IN reading the various articles on the above-named subject in your columns, I have not noticed any remarks on what I may term clump or group avenues. To my view where space is fairly plentiful, this method is more effective from the outset than when planted singly, and the trees when fully developed have a much nobler effect in the landscape. For a good many years after being planted, single tree avenues have a rather meagre appearance. Especially is this the case in exposed positions, and where the surrounding landscape is scantily furnished with trees. Nearly all the species or varieties of trees used for single avenue planting are well adapted for grouping; the exception in my opinion is the English Elm, which being of a more self-reliant nature, its branches do not intertwine with their neighbours so freely, as say Beeches and Limes. I have under almost daily observation some park groups of these two kinds of trees, which are so intertwined in limb and branch growth as to form a mass undistinguishable from a single tree, if one did not look at their base. Severe gales which too often wreak havoc with single tree avenues would not have the same effect in group avenues.

Here I would like to say a good word for *Quercus Cerris*, the Turkey Oak, as avenue trees, in addition to the ones mentioned. Where the soil is of fairly good loamy character, this variety of Oak grows very freely. Its foliage is of a very handsome character, and when the trees are fully developed, the cork-like bark on their stems has a very pleasing appearance. In selected positions I am strongly of opinion that group avenues of the small-leaved Birch would look well. I am careful to name the small-leaved variety, as its drooping branchlets make it a much more

pleasing tree in the winter months than its larger leaved relative. Avenues planted in the way I suggest would not have to be planted so near together as are smaller trees. For the more extensive sites I would say from 60 to 70 feet apart from centre to centre of each group in the case of Beeches, Limes, and Turkey Oaks, and with from 15 to 20 feet less for Birches. In the event of the distances given for the former trees being thought too great, I would here suggest that in the centre of each intervening space, a small group of some one or more flowering trees or shrubs may be planted. Amongst others as suitable for this purpose may be named the finer varieties of flowering Crabs, scarlet and pink-flowered Thorns, the same in Laburnums, and where it will flourish the handsome and not too often seen *Koelreuteria paniculata*. In each case strong plants on stout, 5 to 6 feet stems, should be used. As the larger trees grow, these supplementary groups should be cleared out. The number to be planted in each group would vary according to the site and general surroundings. From three to seven would work out well in ultimate effect.

After marking the sites the ground should be well broken up by double digging, and if the land is poor, either from thinness of soil or other causes, a heavy dressing of rotten dung or garden refuse should be worked in as the task proceeds. The dug spaces should be circular in outline, and vary in size, say from 10 feet in diameter for the smaller groups, to 15 for the larger ones. When planting, use stout, well-rooted specimens of each kind. Do not plant deeply; mule well with any leafy refuse, and stake firmly. It is particularly necessary to avoid deep planting, as one of the most striking parts of a group of indigenous trees is the strong, branch-like roots that rise above the surface of the soil from the base of each tree.

Where cattle are allowed to graze it would be necessary to protect each group with some sort of fence. If wooden fencing is decided upon, I would suggest the use of picketed or cross-topped fencing, although it be not very artistic in appearance if near to a gentleman's residence. Whatever sort of wood-fencing that may be used, it should be square in form when finished, hence, would take up more land than a circular fence. Where the first expense is not an object, iron-fencing would be best. When ordering this sort of fencing, it should be specified that the upright bars should be bent outwards about a foot from the top, with a hole near the end to receive a stout bar of iron, so as to prevent horses from reaching the trees and damaging them. If covert is wanted for winged game, and there are no rabbits about, some stout plants of *Rosa rugosa* and *Berberis Aquifolium* may be thinly planted amongst the permanent trees in the larger groups. If smaller foliaged plants are preferred, the old English Privet would answer well. Rabbits do not injure this nearly so much as they do the larger growing Japanese Privet now so freely planted. *H. J. Clayton, Grimston Gardens, Tulsebuter.*

A VISIT TO THE NORTH. VII. GLASGOW CITY GARDENS.

(Continued from p. 307.)

GLASGOW GREENS.—This is the oldest of the public parks, and consists of 156 acres, which have been acquired at various periods between 1662-1792. Here is the columnar monument to Nelson, and a very beautiful Doulton Fountain, presented to the city by Sir H. Doulton in 1888. This is the district of Glasgow's Whitechapel, and

very few plants indeed will succeed. Only three of the old trees upon the Green now remain! But these 133 acres of land at least keep an open space amidst the congested chimneys around them, and the privilege long enjoyed by the residents to dry their clothes on part of the site is doubtless a boon to them, though the display of clothes is not attractive. In the People's Palace adjoining, which Lord Rosebery opened four years ago, there is an institution that seeks to provide education and recreation for these same people. It is a large building, with museums, reading-rooms, &c., and a huge conservatory, with glass roof and wooden floor, built by Boyd of Paisley. There are Palms, Tree Ferns, *Eucalyptus*, *Camellias*, &c., planted out in this building; and upon the stages around the sides pot plants of various species. The people are encouraged to pass part of their time here by occasional musical entertainments, and it is one of the most popular places in the city.

TOLLERROSS PARK.

An area of 82 acres, is Glasgow's Diamond Jubilee Park, for it was acquired in 1897, the cost being £29,000. Tollerross also was for-



MR. JAS. WHITTON,
superintendent of the Glasgow Parks.

merly a gentleman's estate, and Mr. Whitton, in transforming the place into a public park, has the advantages of big timber trees already grown, and masses of great *Rhododendrons* that hang over the water of a swift-running brook that passes through the grounds. When the proposed wild garden or bog garden has been made, Tollerross Park, which is 3½ miles from Queen Street, will be very attractive indeed. A pretty flower-garden is maintained, and the old glass-houses, and newer ones erected by Simpson & Farmer, contain a capital collection of stove and greenhouse plants, including *Orchids*. Mr. Wilson, who has charge of Tollerross, carries out a system of propagation of these plants for distribution to some of the other parks. Huge masses of *Cyperidium insignis* were growing very satisfactorily in sailors' mess-tubs. I would recommend gardeners who may have extra large plants to obtain similar receptacles for them.

SPRINGBURN PARK

was purchased in 1892 for £20,710, and is 56 acres in extent. The work of making this park is not yet concluded; the actual "laying out" is done, but further adornment and detail remain to be effected. It will make a splendid park of medium size, and already

contains a magnificent winter garden 200 feet long, 70 feet wide, and 50 feet high to the top of lantern, possessing an iron and glass roof, and a spacious gallery. This winter garden, which is used periodically for musical entertainments, was the gift of Messrs. Reid, of Hyde Park Locomotive Works, Springburn, and cost £10,000. There are also four span-roofed houses proceeding from this, each 50 feet by 30 feet, and 16 feet high. Mr. R. H. Moore has the immediate care of Springburn.

RUEHILL PARK

is still the scene of much transforming work, although the land itself (5½ acres) was acquired in 1892 for £35,700. In this, as in all the other parks, Mr. Whitton makes every possible use of the natural features of the site, and adapts them to the purposes required, rather than attempts to create effects that would be purely artificial. The land at Ruehill is extremely uneven, and will never be more than an open space and recreation ground. On the slopes of the great mound, and beneath the flagstaff, where a commanding view of the district is obtained, it will be very difficult to encourage shrubs to grow. They are required to furnish the slopes, and make them as ornamental as may be. In this position, which is the most bleak in any of the parks and gardens, the *Rosa rugosa* has shown itself at present the best able to make headway; and its growth is surprising.

THE BOTANIC GARDENS.

These were acquired by the City Council, in 1891, for the sum of £59,531. They were then but 2½ acres, but since that time the banks of the Kelvin have been incorporated with the gardens, at a cost of £9,360, the area now amounting to 40 acres. The Botanic Gardens are under the immediate superintendence of Mr. Daniel Dewar, who some of us remember had the care of the herbaraceous department at Kew when we were "present" Kewites.

I had only time for a cursory glance at these gardens, but it was sufficient to show how attractive they are, and the collection of plants includes some very rare specimens, whilst others are as remarkable from the cultivator's point of view. There were several plants of *Rhododendron Gibsoni*, for instance, in a collection of greenhouse species and varieties, that I think better than these even Mr. Heale of Messrs. Veitch's cannot have seen. They were cone-like or pyramidal, trained like the old plants of *Azalea indica* used to be, seven or eight feet in height, and not a shoot out of place, or a place without a shoot.

I was greatly interested in the perfectly round glasshouse with copper roof, it is of such unusual appearance. In this there is a central bed with a path around, and the bed is planted with Tree Ferns, forty or thereabouts, growing freely without the hindrance of pots. What a beautiful picture they make, as one looks through the vista of long, beautiful stems! Some of the largest plants were *Dicksonia antarctica*, *Alsophila cycelsa*, and *Cyathia dealbata*, one of which has a double or "twin" head. As we walked through the collection of *Economic* plants, Mr. Dewar said that last year the *Vanilla*-plant produced 450 pods. Rarely indeed does this species yield so well in this country, although it fruits very freely every year in the Duke of Northumberland's garden, Syon House, Brentford. *Paspalum quadrangulare* (Grandilla) was also in fruit.

There is a little Water-Lily house, and a collection of *Nepenthes*, which were looking very pretty. Mr. Dewar drew my attention to a

variety of *Lapageria rosea* with larger flowers that open more fully than the type, and are much more effective.

A collection of three thousand *Chrysanthemum* plants are grown, and are making a good display at the present time.

If further particulars of these gardens are needed, they may be found in an illustrated *Guide* noticed in the *Gardeners' Chronicle*, Aug. 31, p. 168. Some glimpses of the early and interesting history of the gardens are given, and notes upon the prominent plants there at the present time.

OTHER PARKS AND OPEN SPACES.

In addition to the parks I have mentioned, there are the following: Kelvingrove, with adjacent lands, the site of the successful exhibition, 85 acres; Alexandra, and Lands of Kennyhill, 111 acres; Cathkin Braes, 49 acres; Maxwell, 21 acres; Maryhill, 5½ acres; Govanhill, 4 acres; Bunhouse, 6½ acres; Bellahouston, 178 acres; and Richmond, 41 acres; making a total of fifteen parks, with a combined acreage of more than 1,020 acres, acquired at a cost of about £560,525. Maxwell Park was the gift of Sir John Stirling Maxwell, Bart.; and Cathkin Braes a gift of James Dick, Esq. Mr. Whitton's charge also includes the care of sixteen minor open spaces, and seven graveyards.

I think, therefore, that it will be granted that Glasgow is doing her duty from our point of view; and it is noticeable that many of the parks and open spaces have been acquired during the past ten years, when all local authorities have been waking up to the importance of the work.

With all the responsibility that the City Council has assumed, that body could have no better man for its Chief Superintendent than is Mr. Whitton, whose portrait is given on p. 391. He has had the necessary experience in horticulture, he is a business man to the backbone, and possesses a kindly manner that makes him beloved by all. There is no public man in Glasgow more popular.

Some of our readers may remember that in 1892-3, before leaving Glamis Castle Gardens for Glasgow, Mr. Whitton contributed a weekly article to these pages on the cultivation of "Fruits under Glass." P.

(To be continued.)

The Week's Work.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Mixed Orchard-house.—If the house is not cilled with *Chrysanthemums*, it should be put into working order, although the trees need not be housed before Christmas. The glass and woodwork should be cleaned, brickwork limewashed, and all woodwork given a coat of paint. These jobs may be carried out on days when work out-of-doors cannot be undertaken. If, as so frequently happens, the centre row, or perhaps the whole of the centre bed in large houses contains permanent trees, these should be carefully cleaned with soap-suds, and the shoots thinned and tied into form, provided the shortened shoots have a wood-bud at the end. The retention of wood-buds should not be overlooked, as it is so easy to render a shoot useless by removal of the terminal wood-bud. The work finished, the house must be kept very cool, air being freely afforded when the weather is not unusually severe. Keep the borders moist, or bud-dropping is sure to occur. The buds of trees generally being so ripe and prominent, the position in which the trees are stood, with their roots secure from frost,

should be open and exposed; otherwise, in a mild winter easily excited kinds and varieties may start prematurely into growth. A sharp look-out must be kept on the birds. An excellent plan is to cover the trees with herring-nets at this season. The potting of fruit-trees may still be performed, but earlier potting gives more time for the trees to get re-established. Maiden trees may be lifted, potted up, and plunged in the open borders, but so much time having been lost, the best place for these is the lightest and most airy part of the orchard-house. Figs should be stored where they can be kept dry and safe from frost; in fact, I opine that orchard-house trees may be kept in the houses the year round with much advantage.

Pol Strawberries.—The most important work in connection with these plants is storing for the winter. Although the crowns have ripened well, a great many growers, owing to the open weather, have delayed the plunging of the plants till real winter weather has set in. The work nevertheless must be done. If cold frames are scarce, a good alternative is a single board placed on edge back and front, forming a satisfactory plunging-pit; short stumps being driven into the soil to keep them upright, and left a foot in height above the boards, and to which laths for carrying the protecting cover are nailed. Coconut-fibre refuse, spent tan, or dry tree-leaves answer very well as plunging materials; keeping in the moisture when heaped up well upon the rims, and forming a protection against frost. The worst of all methods is to place the pots resting on their sides in the form of ridges, and filling-in the centre and between the pots with coal-ashes or leaf-mould; and should the winter be a wet one, the plants may take no harm. But the soil in due course becomes dry and shrinks from the sides of the pots, and air takes the place of moisture, and the roots may perish or be greatly injured. The Strawberry should never lack moisture in the soil, hence the risk incurred by laying the pots on their sides.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwood Hall, Loughborough.

Ferns.—Active growth being over, a less moist atmosphere will be needed; afford only just sufficient water at the roots to maintain the plants in a healthy condition. Plants which have become shabby through hard usage or constant cutting from, may be placed in a position in a lateinery where little watering will be required, and there is a temperature of 50°, until they show signs of new growth in the new year. Deciduous varieties of *Davallias*, including *Leucostegias* and *Acrophorus*, may be placed beneath the taller Palms, &c., in a temperature of 60°. No water will be required until the resting period is over. By such means the robust-growing varieties of *Adiantums*, *Aspleniums*, *Pteris*, &c., can be afforded more space during this dull period. Remove the fronds of the climbing *Lygodium scandens*, and keep the roots moderately dry, in a temperature of 55°.

Chrysanthemums.—Remove these from the conservatory directly they cease to be decorative, and re-arrange the plants, adding later-blooming varieties. Make preparations for propagating. Select strong and short-jointed young shoots for cuttings, and insert them singly in small 60-size pots, using a compost of loam, leaf-soil, and sand; make sure that a little sand is placed below and around the cutting. Select, as far as possible, for early propagation those varieties which require stopping in the early stages of growth; following on with the general collection as cuttings are procurable. Place the cuttings into a temporary frame, or in a position where they can be afforded a temperature of 50 to 55°, and afford them a slight syringing on bright days. Remove the top glass or light at nights to dispel superabundant moisture. Do not use artificial heat.

***Lilium longiflorum* and *L. candidum*.**—Immediate potting of imported bulbs is necessary, or they will commence to shrivel. We prefer to put three bulbs into a 6½ or 7-inch pot, using a compost of two parts of good turfy loam, one part well-decayed manure, and one part leaf-soil, with the addition of sand to keep the whole porous; cover the bulbs an inch deep, and let the pots be three parts filled with soil when finished. Plunge the pots in leaves or ashes in a frame until there is root-action, and growth has commenced. No attempt to force these bulbs must be made until abundance of roots have been made, and top-growth is observable.

***Gladiolus The Bride*.**—Pot up a good supply of these bulbs for forcing purposes, placing six to eight bulbs in a 6-inch pot in a compost of loam, leaf-soil, and sand. Put them in a cold frame, and be sparing of water until there are signs of growth.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASTRES, Esq., Cambridge Lodge, Flodden Road, Gaubertwell.

Miscellaneous matters.—For the next few weeks the plants in the warm Orchid-houses will be more or less dormant. This will afford the gardener an opportunity to cleanse the plants of insects and dirt, and to put new sticks to those requiring support. This being done, the pots, pans, staging, and the glass should be made clean. The Orchids of the cool and intermediate sections, which are generally making some amount of growth at this season, need much attention in the matter of applying water, and where the plants as of *Miltonia vexillaria* are very critical subjects, the least excess of moisture at the root may destroy or greatly injure a plant in a few hours. *Masdevallias*, especially the so-called botanical species, are very liable to be injured in this way. "Spotting" of the leaves of the more robust species of *Masdevallias* may usually be traceable to too much water afforded during lengthy spells of cold, dull weather.

***Sophranitis grandiflora*.**—This plant is perhaps the most desirable of all Orchids of small growth, and it is one which most readily accommodates itself to cool-house treatment, and blooming as it does in the winter season, is an additional attraction. Importation of the plant generally take place at the present season, so that no difficulty is experienced in procuring plants at auction sale-rooms. When purchased, the plants should be placed several together so as to fill shallow pans, well drained with crocks, and filled up with a potting compost consisting of turfy peat and sphagnum-moss in equal proportions, pressing it moderately firm. Wire handles should then be attached to the pans, and the plants hung up in proximity to the roof. Water may be applied in quantity sufficient to keep the pseudo-bulbs plump till new growths begin to form, after which more water must be afforded. Newly-imported *Sophranitis* should be placed in a cool-house.

Other Mexican Orchids imported at the present season are *Oncidium sarcodes*, a useful summer-flowering species, with very large racemes of brown and yellow flowers freely produced. The plant does best in well-drained pots, which should be large enough to contain it without unduly cramping the roots, and using a compost consisting of peat and sphagnum-moss in equal proportions. The warmer intermediate-house is the most suitable place for it. *O. Marshallianum*, the finest summer-flowering species, is now being imported, as is likewise *O. Forbesii*, which should be placed in pans or shallow baskets, and hung not far distant from the roof at the cooler part of the intermediate-house, or in a fairly dry part of the *Olonoglossum*-house. They require but little moisture at the roots before growth becomes well advanced. It should be remarked that the growth of imported plants should not, as a rule, be hastened for a few weeks, or the growths will be weak. It will be time enough to push them along when the days begin to lengthen.

Cattleya Harrison is now arriving in this country. It is a very useful and beautiful species, and much in demand for cut flowers. The plant may be grown in pots, placed near the glass. A suitable compost consists of two parts peat and one of chopped sphagnum-moss. Imported plants are usually of considerable weight, and the long pseudo-bulbs should be secured to strong, neat sticks. Afford the plant water sparingly, till growth is well advanced.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Gaillardias.—Border plants have flowered well this year, also the perennial Gaillardias. These showy plants last till cut down by frost, and are effective in the garden and as cut blooms. They like a dry warm soil, or one that is well drained, and a position open to sunshine for the greater part of the day. The varieties are extremely numerous, and show great variety of colour. There are two which show some great difference in tint, namely, *Rose of Hush* and *Rosebud*; but they are tender at Poltimore Park, the soil being moist and heavy, but in a drier soil they would doubtless survive any winter. Other varieties pass the winter safely here. Plants may be planted at this season in open weather, or planting may be deferred till the spring. A moderately rich soil should be afforded, and they should be planted in small or large masses to produce the finest effects; and if grown by themselves in beds they may be pegged down to the soil. Where plants are likely to be lost during the winter, cuttings should be struck amurly, putting one cutting each into small pots filled with light sandy soil, and placed in a cold frame from which frost is excluded. If slugs abound, fine coal-ashes should be scattered round about the plants in the borders and beds. The following are a few nice varieties, *Vivian Grey*, *splendissima plena*, *James Kelway*, *W. B. Childs*, *Primrose Dame*, *William Kelway*, *Langport*, &c. The two varieties previously mentioned, unless in moderately dry soil, would be best planted in the spring.

***Schizostylis coccinea*.** This bulbous plant is useful as furnishing in a fairly dry soil a bit of bright colour late in the autumn. The plant should be grown in a warm place out-of-doors, as for example the border on the south side of a stove or other warm house, and in frosty weather be afforded slight protection. The plant may be grown in a mass out in the open in any fairly rich soil, and be covered with an ordinary frame when the flowers-spikes push up.

***Trollius* or *Globe Flower*.**—These are desirable plants for growing in the mixed border, or near streams or ponds. They flower in the late spring and early summer months. The plants may still be planted or divided, choosing mild weather for carrying out the work. If divided and set out in the spring, the plants suffer greatly from strong sunshine and cold winds. *T. giganteus*, *T. asiaticus*, *T. europæus*, and *T. acaulis*, are among the best.

***Christmas Rose*.**—As the plants begin to push up their flowers, sheets of glass or hand-lights should be placed over them so that the flowers may not be splashed by rain. Glass protection has the good effect of lengthening the flower-stalk, which enhances their usefulness as cut flowers. If no glass is put over the plants, the ground round about them should be covered with litter, as for Strawberries.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Becton, East Endleigh, Devonshire.

Seedbeds.—The recent frosts have denuded the crowns of foliage; the latter may, where grown for forcing indoors, be lifted in such a manner that the buds are not injured, and the best mode of doing this is to trench out the roots by going over the ground regularly. The middle-sized things should be laid in for

forming next year's sets, covering them with soil to the depth of 6 inches, and throwing some litter over them in severe weather. When the men cannot work outside, these things may be cut into sets, 1 to 6 inches in length, with a level cut at the top and a slanting one at the lower end. Having made them, lay them close together in boxes of soil, and plant out in March. Land that has been under a crop of *Seakale* should be forked over carefully, and every bit of root collected.

Cabbages.—Those plants that were set out early in the month of October, having grown to a good size, will be the better for a stirring of the soil with a hoe, after giving it a weeding by hand.

Parusley.—Place garden frames over a portion of the crop, or lift and pot or box as many roots as can be accommodated, and place in ainery or Peach-house, and afford it plenty of air in mild weather.

Lettuces.—Plants in pits and frames should be fully exposed by day, excepting in rainy or frosty weather. I am now lifting and planting *Winter Giant* and *Lee's Hardy Green* Lettuces in frames, the seed having been sown in August; and these are fairly well hearted, and will afford a daily supply until some time in January.

Endive. The curled-leaved varieties being less hardy than the *Batavian* or broad-leaved, cannot be depended upon for a lengthy supply after this date. The broad-leaved plants blanch very satisfactorily when placed in a Mushroom-house or other darkened place having the same temperature. Chicory should now be brought on in a similar manner, first removing the old leaves all but about a tuft of 1 inch in length. Finely sifted leaf-soil should always be kept in store for placing around the roots of the plants mentioned.

General Remarks. If protecting materials have not as yet been placed around *Celery*, *Cauliflower*, and *Broccoli*, it is to be feared that recent frosts have spoiled many of the plants, which would be rather tender owing to the luxuriant growth of the plants in late autumn. Clear away all blackened heads, and the stumps of the various vegetables, and fill any spare pits and frames with the more forward *Broccoli*-plants, i.e., those with heads from 2 to 3 inches across. Introduce more roots of *Spear-mint* and *Tarragon* to the forcing-pits, giving slight bottom-heat at the start. *Mustard* and *Cress* may be sown at weekly intervals, or according to demand; and then early and severely thin the crop of *Radishes* sown in frames in October.

THE HARDY FRUIT GARDEN.

By C. HEWITT.

Pruning.—By making an early start much of the pruning may be carried out in better weather than usually prevails later in the winter. The first to be taken in hand are *Pear-trees* growing against walls and espaliers; if these have had their annual shoots shortened, the pruning required will be slight. *Old Pear-trees* are sure to have some over-long fruit-spurs, and a few of these should be cut back or removed annually; the operation being invariably followed by a crop of new shoots, of which the strongest is selected as the future fruit-spur. These long spurs will occur in different parts of the tree; and when cut back it should be to within an inch of the old wood. If the saw be used, the rough surface should be smoothed with the pruning-knife. As a rule, the earlier in the season that these fruit-spurs are removed, the more readily growth starts from dormant buds at the base of the snag. In the case of a second growth having taken place after the summer pruning, the shoots must be cut away below that break, and a couple of dormant buds left on the branch; and where the spurs are too thickly placed, a few may be entirely removed. The leading shoots of the current year's growth may be reduced to 18 ins. to 2 ft. in length, according to strength,

and weak shoots still shorter—say, to two or three buds. Younger trees that are trained horizontally, or fan-wise, should be so pruned that the resulting branches will be distributed regularly, the growth of the past season being shortened, so as to ensure its breaking where shoots are required for the forming of a symmetrical tree. Strong shoots may be left about 2 ft. in length, and weaker ones proportionately less. The central leader must be pruned according to the distance at which shoots are desired, allowing one bud on either side and a terminal bud for extension.

Cordon-trained trees should be similarly pruned, and where there is space for further extension, the leader should be shortened sufficiently to ensure a regular break of spurs, or the cordon will be unsightly. If the *Pear-trees* are free from scale, and otherwise clean, the training of the branches may follow the pruning. The largest branches will need tying to large wall-nails or staples with tarred string, which usually lasts two years, and doubtless it should be renewed. Shreds are the most suitable things for securing the young shoots. Trees infested with scale or covered with lichen should be taken from the wall and dressed with an insecticide to destroy scale, the branches being scrubbed with paraffin emulsion or Gishurst Compound at the full strength given on the boxes, and the lichen or moss scraped away, or removed with a dry scrubbing-brush. Later in the winter the trees may be sprayed with the caustic-soda and potash mixture that has been often recommended in the *Gardeners' Chronicle*, which will destroy any parasites that may remain, and give a healthy appearance to the trees. To make this wash, dissolve 1 lb. of caustic-soda and 1 lb. of crude commercial potash in 10 gallons of hot-water, and use at a temperature of 120°. While the trees are unfestened, all nail-holes and crevices in the brickwork should be pointed, a small quantity of cement being added to the mortar used.

THE APIARY.

By EXPERT.

Honey sections.—Now, as regards sections, a little box made to rest on the top of the hive, holding about fifteen 1-lb. sections, will, if the sides hang down well over the skep, prevent it from being blown off, and help to get rid of rain and snow-water. As soon as the sections are full, take them out and re-fill, which in a good season is an operation that can be done three times, and sometimes more often; and if the honey thus obtained be reckoned at 8d. per section, it will show a good return.

Seasonable remarks.—Have all bee-hives well wrapped up, with a cake or two of earth on the top; and every rook should be examined for leaky places, stopping these effectually.

A WHITE BLACKBERRY.—Among the numerous hybrids raised by Mr. LUTHER BURBANK is that above mentioned, and of which he speaks in the following terms:—"The well-known *Lawton* is, when ripened, unsurpassed, and very generally known as the most productive market berry. Owing to its fixity of race, it will reproduce itself from seed almost exactly, and its seedlings will not be influenced when raised from seed pollinated by other varieties; but it readily imparts its good qualities when employed as the staminate parent. One of the great-grandparents of *Lawton* was *Lawton*. The first generation of seedlings, when crossed with *Crystal White*, was all black; the second also, though varying much in other respects; but the third produced this wonderful plant, bearing the snowiest white berries ever seen. Very little attention was paid to the long rows of cross-bred descendants, until one day this berry was discovered, among its black relatives, with the canes bending in various directions, with their load of delicious, snowy berries, which are not only white, but so transparent that the seeds, which are unusually small, may be seen in the berries when ripe."

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the original communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR DECEMBER.

SUNDAY,	Dec. 1	Chert. Horticultural Exhibition.
TUESDAY,	Dec. 3	National Chrysanthemum Soc. Exhibition, Royal Aquarium, Westminster (2 days).
SATURDAY,	Dec. 7	Royal Botanical Society Meeting.
TUESDAY,	Dec. 17	Royal Horticultural Society, Committees meet at Westminster.
THURSDAY,	Dec. 26	Bank Holiday.

SALES FOR THE WEEK.

MONDAY, Dec. 2.—	Bulbs, Shrubs, &c., Stevens' Rooms; also at Protheroe & Morris; Johnson, Diamond & Sons; and Pollexfen and Co.
TUESDAY, Dec. 3.—	Roses and other Plants, Pollexfen & Co. Bulbs, &c., at Protheroe & Morris.
WEDNESDAY, Dec. 4.—	Plants, &c., Protheroe & Morris, Stevens, and Pollexfen & Co.
THURSDAY, Dec. 5.—	Palms, Rhododendrons, &c., Pollexfen & Co.
FRIDAY, Dec. 6.—	Orchids from Kochford's; by Protheroe & Morris-Sursery Stock, Pollexfen & Co., and Herbert W. Rendell.

(For further particulars see *Advertisement columns*.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—41.3.

ACTUAL TEMPERATURES:—

LONDON.—November 27 (6 P.M.): Max. 47°; Min. 40°.
November 28.—Fine, mild.
PROVINCES.—November 27 (6 P.M.): Max. 46°; E. Ireland; Min. 41°, Sutherland.

Hardy Fruit Culture and Preservation.

The genial superintendent of the gardens of the Royal Horticultural Society at Chiswick has had to undergo cross-examination at the hands of the ubiquitous and all-inquisitive interviewer. The results may be seen in the pages of *Commerce* for October 30, together with a portrait of the victim. In view of the great importance of the subject, and of the great displays of bottled fruits made by Messrs. ARSTIN & Co. and others at the meeting of the Royal Horticultural Society on Tuesday last, it may be well to call attention to the line of cross-examination adopted by the interviewer, and to the opinions which were elicited. The subject in hand was the drying of fruit.

Every now and then there is a great outcry that we do not avail ourselves of the opportunities at our disposal, that good fruit is not picked because the price that would be obtained for it would not pay the cost of picking and marketing, or that it is allowed to fall and rot on the ground for the same reason. Every now and then we ourselves are witnesses of cartloads of what was once good fruit consigned to the dust-carts and conveyed away as refuse from the adjacent market, because there was a "glut," or because, for some cause or another, it had not been found possible to dispose of it. This is one side of the case. On the other, there is the incontrovertible fact that hundreds of tons of one sort or another of fruit are imported in the course of the year,

a very large proportion of which might just as well have been grown at home. And as to quality, everyone that has seen the Kentish Apples staged by Mr. WOODWARD and others must admit that they are unsurpassed. As for Plums, except in certain instances, we have never seen such fruit on the Continent as may be found in our markets. Similarly, when English-grown Grapes were sent to the Paris markets, they were found to be superior to those grown in France, so much so, that the French Government at once placed a prohibitive duty on their importation, thus killing a promising branch of industry, and depriving the average French consumer of grapes, which in quality were superior to any he could get at the price. These facts would give some notion of the difficulties the would-be grower of fruit for market has to contend with.

How are these difficulties to be met? Some say by jam-making, and no doubt Mr. GLADSTONE was right in that matter, for jam-making has become a profitable industry, and to some extent relieves the grower of his embarrassments, particularly in those cases where the grower can deal with his own produce on the spot.

Another suggestion is to dry the fruit and compete with the quantities of dried fruits, which reach our shores from France, from Bosnia, from California, and Australia. Experiments in this direction were made in former years at Chiswick—experiments which were perfectly successful except in the one item of profit.

The want of success at Chiswick, commercially speaking, should not, we think, deter others from making further experiments, as indeed Mr. DALE has done. We do not expect an experiment to be directly remunerative; we only want to see if there is good reason to suppose that on a larger scale and under other conditions success may reasonably be expected. We think the Chiswick trials did show this, and it is for the commercial men now to do their part. Mr. WRIGHT told his questioner, however, that intending fruit-growers should, instead of attempting drying, "do everything in their power to prolong the supply of fresh fruit by cultivating early and late sorts, and by providing better storage accommodation than exists at present—in that way profit lies." Mr. WRIGHT'S opinions as to the necessity for planting and cultivating for quality rather than quantity, for growing early and late sorts which are available when the markets are not over-stocked, as they may be in the mid-season, and his views on the necessity for care and honesty in putting goods on the market, are shared by all those who have given consideration to the matter.

Except perhaps in the case of Strawberries and bush fruits, it may be questioned whether, in Kent, at least, there is now any large quantity of land that could advantageously be given up to fruit-culture, but in other countries, and especially in Ireland, there is plenty of room for extended fruit-culture. Incidentally we may mention that whilst penning these notes we received from Mr. HARTLAND, of Cork, some specimens of Pear-good's Non-such, of high quality, heavy, well coloured, free from blemish, and of better flavour than is usual in this Apple. Moreover, they were so carefully packed,

that not even the rough usage of the postal authorities had been able to inflict a bruise on them. If these can be taken as samples of what can be done in County Cork, there is surely a good prospect of a remunerative culture. In these days of competition it will be imperative to keep the quality of the fruit at as high a level as possible, and never to relax for a moment the care in packing, or the diligence in watching the markets.

As far as the bottling of fruit is concerned, the exhibition at the Drill Hall on Tuesday last showed what may be done. Indeed, it would have been more convincing to the experts, and more consonant with the dignity of the Society, if a few samples only had been shown, instead of the terribly commercial display, which excited quite as much unfavourable comment as admiration.

Messrs. ARSTIN & Co. displayed a collection of about 2000 bottles, containing all kinds of British-grown soft fruits, with the exception of Strawberries. Though there was very unnecessary duplication in this collection, it served to show how successfully these fruits may be preserved whole in a condition little removed from the natural, and without the addition of sugar, or anything but water. The fruits, as seen in these bottles, were quite natural in colour, whether the specimens were green Gooseberries, red Raspberries, or yellow Plums.

Other exhibits were made by the Lady Warwick Hostel, Reading; the Horticultural College, Swanley; and Messrs. LEE & Co., Maidstone. In the collection from Swanley, were some Gooseberries bottled as long ago as 1896, and they had kept their colour well; whilst Mr. ARSTIN declares that his fruits may be subjected to extreme variations in temperature without any injurious effect. Also, that when taken out of the bottles, the fruits will keep good for several days if the weather be cool, some having been kept in good condition in such circumstances for three weeks.

Fruit bottling is no new practice, however. Housewives have preserved small quantities in this way for ages, and with more or less success. But sometimes the fruit did not keep well owing to the method of bottling failing to completely exclude the air from the fruit. Of late years there have been invented several very convenient stoppers, by the use of which it is easy to secure a vacuum, which will hold the stoppers in position, and, together with complete sterilisation of the fruits within, preserve them for an indefinite period. These vacuum stoppers have given a great impetus to fruit-preserving, and some of the leading firms of jam makers are now engaged in this industry, which in a commercial sense is certainly new in this country. Messrs. ARSTIN & Co. declare that they have discovered a system differing in detail from any of those practised by other firms, being less costly, much more certain, and requiring only one quarter of the time.

This much was divulged by Mr. J. E. ARSTIN in his lecture upon the subject on Tuesday. But Mr. LEWIS CASTLE and others failed to get any information as to the system recommended with such hopefulness; the lecturer declaring that having lost £300 in one year in making experiments, he was not prepared to divulge his secret. He did say, however, that it was essential to success that the fruits used for preserving whole should be of the very first quality, and it is

necessary to examine these more than once, and to eliminate every fruit of which the skin has been broken or that possesses any flaw.

It may be well to remember, therefore, that the whole-fruit preserver will provide an outlet for only the best and finest dessert fruits; and those of second and third-rate quality, which are at present the cause of the periodical glut upon the market, will, as heretofore, be left for the makers of jams. In view of this aspect of the case, we may remark that the most skilful of hardy fruit-growers assert that they have no difficulty at present in disposing of the finest quality of fruits, so that it is not necessary for them to preserve it, but those of inferior grades are unprofitable.

All this points to the necessity for fruit-growers to lay themselves out to produce the type of fruit most desired. We have urged again and again that the successful fruit-cultivator in the future, as at present, will be those whose object it is to produce the very best samples of the choicest varieties, and who will give proper attention to grading and marketing. Such cultivators will have no difficulty in obtaining remunerative prices, whether the fruit be consumed whilst fresh, or sold to the fruit-preservers.

For the assistance of those gardeners and others who may like to preserve small quantities of fruits for their own use, we will reproduce the directions which the Chairman, Mr. CHEAL, gave to the audience at Tuesday's meeting. Take some bottles with air-excluding stoppers, and nearly fill them with carefully selected fruits. Put them thus into the oven, and let them remain there for a few minutes, until the fruits show first signs of cracking, then pour boiling water over them, and seal the bottles at once.

***OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1902. 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.

LINNEAN SOCIETY.—On the occasion of the meeting to be held on Thursday, December 5, 1901, at 8 p.m., the following Papers will be read:—1. On the Foraminifera collected round the Fanafti Atoll, from Shallow and Moderately deep Water, with Notes on new Species from the Sands of the Reef Slope; by Mr. F. CHAPMAN, A.L.S., F.R.M.S., 2. Protoplasmic connections in the Lichens; by Mr. J. H. SALTER, D.Sc., &c. To be exhibited:—Ten abnormal sacs of the Frog; by Dr. R. G. RIBWOOD, F.L.S., &c.

KEW.—A list of seeds of hardy perennial and arborescent plants, available for exchange, has been published by the authorities of the Royal Gardens, Kew. These seeds are not sold to the public, but are offered in exchange to the correspondents of Kew, and to public botanic establishments at home and abroad.

WEST INDIAN FRUIT.—Those interested in the resuscitation of the West Indian fruit trade will hear with regret, per a telegram from St. Thomas, that according to news received there from Barbados, the steamer *Pava* has put in there so damaged that she cannot proceed to her port in this country. It appears that, on the voyage between Jamaica and Barbados, the reserve supply of

chemicals, employed in reducing the temperature as a means of preserving the fruit on board, exploded, killing the inventor of the process (Mr. LORTON), and two others, also injuring the captain and several of the crew. The afterpart of the *Pava* was wrecked.

SPARKS AND CROPS.—Injury done by sparks from railway-engines to trees or growing crops has so seldom been recovered for at law that it is worth stating that the North Eastern Railway have not appealed against a recent decision by His Honour Judge STEAVENS in a case in which they have had to pay almost the whole sum claimed. It is necessary to show negligence. But the negligence may be a permanent condition; for example, owing to the steepness of an incline necessitating specially heavy pulling such as may shoot large pieces of hot ash a long distance. The damage in the Cumberland County Court case was to a part of a plantation of young Conifers.

THE DWARF JAPANESE TREES.—Under the auspices of the Japan Society, Mr. TORII TSUMURA lately delivered a most interesting lecture at 20, Hanover Square, W., on "Japanese Dwarf Trees." Mr. ARTHUR DUNY, who presided, described the subject as being quite one of the questions of the day in London at the present moment, and certainly the great interest and keen curiosity excited by these products of the Japanese "garden artist" are widely spread, and were demonstrated by the dimensions of the gathering assembled. Mr. TSUMURA'S paper, with lantern-slide illustrations, was full of literary and poetic description, but as an exposition of the mystery of these wonderful productions scarcely satisfied the curiosity of the gardener who wants to learn how they are achieved. The lecturer hesitated to commit himself to a definite statement as to how long the art has been practised. Certainly pollard trees were cultivated at the beginning of the eighteenth century, and he is inclined to think that at a very much earlier period the art of dwarfing trees was introduced into Japan from China, and was later much developed on Japanese soil. Illustrations and expositions of the methods of grafting and training the branches, easily understood by an English horticulturist, were given, and some indication of soils employed in the cultivation of certain trees, and the control of the watering. But as to the treatment of the roots, which will seem to some to be the key to the marvellous results attained in dwarfing, there was very little enlightenment. The Japanese expert manages to keep only the fibrous and leading ends of the roots in the soil, and in some way prevails upon the large roots to exist above the surface. As Mr. TSUMURA expressed it incidentally, "Nature authorises the gardener to dispense with some of the roots," but it is strange that in so limited a space enough active root-fibres are preserved, and can draw enough food from the soil to induce and support a healthy dwarfed growth of forest trees, whose roots and branches in a natural state extend over an area of many square yards. *Westminster Gazette.*

A NEW REMEDY AGAINST PHYLLOXERA.—Professor YASSLERER, in the Gironde, France, as quoted in *Some Miscellaneous Results of the Work of the Division of Entomology*, U.S. Department of Agriculture, 1901, p. 95, has for several years past met with good success in using calcium carbide against Phylloxera. It is said to be superior for this purpose to bisulphide of carbon, both as to efficiency and absence of danger in handling. The cost, also, is less, and it can be used in any season. It is

sufficient to use the residue resulting from the manufacture of carbide of calcium, which is of little value otherwise, and which is sold at about 2 dols. for 220 lbs. For 1 hectare of vineyard-land (1 hectare equivalent to 2-171 acres) about 1100 lbs. of carbide are required. The carbide pieces are put into holes in the ground about 8 inches deep; water is poured in, and the hole filled up again. The resulting vapours kill the phylloxera, while the ammonia generated manures the ground. Carbide is at present extensively used in the vineyards of southern France, and experts claim that it is the best remedy against phylloxera. *Richard Genthner, Consul-General, Frankfort, Germany.*

PINUS LARICIO VAR. MOSERI.—We have to thank M. MOSER for a specimen of this curious variety, which is indeed not only curious, but attractive as well. It is a dwarf, densely-branched Pine, somewhat globular in shape. The leaves are of a bright green in summer, but in winter assume more or less of a golden-yellow coloration. It is a good plant for the rockery or the front of a shrub border.

ST. PETERSBURG BOTANIC GARDENS.—From the reports by A. FISCHER DE WALDHEIM, of the Imperial Botanic Garden in St. Petersburg, we learn the following news:—The Minister of Agriculture sanctioned, last March, the formation of a central phytopathological station in connection with the Imperial Botanic Garden. This is now in operation, under the direction of Mr. A. JACZEWSKI. Mr. W. KOMAROW, Conservator of the Garden, after studying the plants from Manchuria in the Garden, has commenced the publication, in the *Acta horti Petropolitani*, of the results of his studies and of his own investigations in the country, under the title of "Flora Manshurica." The following botanists have been made delegates of the Garden for scientific purposes:—Messrs. TASHLIRK and LIPSKY, in Siberia; NADSON, on the borders of the Baltic; FEDSICHENKO, in Turkestan and Palibin, in the North (Arctic) Sea. Further, Mr. ARCHBOWSKY has received a commission to collect Algae on the borders of the Baltic. The Victoria Regia in the new large tank in the Garden began to flower as early as usual, on May 25. The two specimens of the plant in the garden bore from May 25 to September 3, sixty-three blooms. During May, 11,035 persons visited the houses, 2,000 of whom came the first day that the Victoria regia flowered. In May and June a series of public lectures was organised, and these were delivered by Messrs. ARCHBOWSKY, GERBINOFF, KITSCHENOFF, and KOMAROV. During March each visitor to the houses received at the entry a list of the most remarkable flowers then open in each house. In July one of the oldest specimens in the garden of *Enecephalartos Altensteini* began to flower. On January 1, 1901, the number of species and varieties of plants was 33,697. These notes will be appreciated by all interested in the St. Petersburg Botanic Garden, for they form answers to the questions that every visitor naturally asks.

ORANGE-GROWING IN GRAHAMSTOWN.—In the Report of the Grahamstown Botanic Gardens for 1900 the Curator, Mr. E. THOMAS, says that in spite of the losses caused by war and by a four years' drought (now only broken up), the Citrus family have thriven well. Trials have shown that various new kinds of Oranges imported by the native nurserymen are destined to hold a first place in the markets, not forgetting, however, that a good strain of the old Cape variety may suit some conditions of climate better than the last imported sorts. The following history is given of the Wash-

ington Navel Orange, which "apparently originated in Brazil, and was first imported into America about the year 1870; but specimens were fruiting in Grahamstown years before that, having been imported from Bahia by the late Mr. BREHM, of Vitehnage not later than 1853. Young trees grafted from these imports reached Grahamstown about 1856 or so." Cultural notes are also given in the Report before us, wherein we read:—"Of equal importance with the kinds of Orange to plant, is the stock they are grafted on. Although the trees certainly grow faster grafted on the rough-skinned Lemon, it is no longer made use of in this nursery. At present, all the trees grown here are grafted on one of two stocks, each of which has its peculiarities of growth. The Seville Orange was adopted as a stock in consequence of official reports from various Orange-growing countries that this Orange was not subject to the gum disease. The other Citrus we graft on is, in this part of the colony, known as 'Pamplemousse.' Of the disease-resisting properties of this tree we have what appears to be sufficient evidence in the colony. . . . Probably this tree is one of the numerous varieties of 'Khatta Orange,' described by Dr. BONAVIA in his book, *The Oranges and Lemons of India and Ceylon*. . . . As some stress has been put on the question of budding *versus* grafting the Orange, I may remark that there is not any physiological significance attached to the difference of the two methods. In budding, a small piece of wood having one bud on it, is inserted under the bark of the stock; and in grafting, a larger piece of the scion, taken with three or four buds, is partly inserted between bark and wood of the stock." We recommend this pamphlet to the consideration of all interested in Orange-cultivation, the extracts here given being sufficient to show how valuable it should prove to them.

"YOUR GARDEN MAY KILL YOU.—From the earth we get everything to sustain life, but we also get a great many things that destroy it. The seeds of typhoid fever, cholera, lock-jaw, blood poisoning, pneumonia, scarlet fever, leprosy, and consumption, are all found to flourish in the soil. As a rule, they are either on the surface, or not very far from it. The largest number live at a depth of from 1 to 2 feet. In warm, wet weather they come up, and when the ground is frozen they move downwards. As a general rule, there are few germs deeper down than 4 feet. If a gardener receives a wound on the hand or foot he is in considerable danger of getting tetanus, or some other disease. Likewise when he eats his food without well washing his hands, he may have an attack of typhoid fever. Typhoid fever, in fact, is always worst in autumn—the season when Potatoes, and other underground crops, are dug up. On the other hand, a miner who gets a wound finds that it heals rapidly. This is because there are no germs at the depth at which he works. If grass be grown on a soil swarming with disease germs they all disappear. A very useful conclusion has been drawn from this fact. Waste areas in towns, being regular death-spots by reason of the quantities of disease germs they breed, are now planted with grass in some up-to-date foreign cities."

The above "cutting" has been sent to us for our opinion. Our opinion is that a statement of this character should never have been published without previous verification of the so-called facts. Of course, if the soil should contain the germs of typhoid fever or cholera, it would be a source of danger, but under ordinary circumstances these

poisonous germs do not exist in the soil. How often do gardeners cut themselves, and how very rarely do any evil results follow? No one would dig in a plague-pit if he could help it, or at all, without taking precaution, but under ordinary conditions no form of exercise is more beneficial than gardening, and to attempt to disparage it by such ill-judged statements as those quoted, is to incur very serious responsibility.

"THE BEST HARDY PERENNIALS."—Mr. F. W. MEYER, during his twenty-five years' connection with the well-known firm of Messrs. ROBERT VEITCH & SONS, of the Royal Nurseries, Exeter, has had considerable experience with hardy plants, and at the request of Messrs. BLAKE & MACKENZIE, Horticultural Printers and Publishers, of Liverpool, has written the descriptive matter and cultural directions for a new book they are publishing under the above title. The book contains descriptions of hundreds of hardy perennials, and many practical hints regarding arrangement, cultivation, &c. It is illustrated by forty-eight coloured plates, measuring 10½ by 8 inches. We shall take an early opportunity of alluding at greater length to this volume.

TOBACCO IN CONNECTICUT, U.S.A.—To many people it may seem strange to link the two, but we learn on authority that the acreage of tobacco is 10,120 acres, and this yielded in the last season 16,930,770 lb.

"ICONES SELECTÆ HORTI THENENSIS."—Two parts completing the second volume of this publication are now before us. They are, as we have already mentioned, devoted to the description and illustration of plants growing in the collections of M. VAN DEN BOSSCHE at Tirkemont, in Belgium. The illustrations are faithfully and beautifully executed after drawings by M. D'ARBEVAL; whilst the botanical details are entrusted to the careful and critical hands of M. DE WILDEMAN, whose notes are of great value and interest. Brief cultural details are also given. An enumeration of the plants figured will be given in our list of "Plant Portraits."

"WEST INDIAN BULLETIN."—This is the journal of the Imperial Agricultural Department, of which Dr. MORRIS is the Director. It is devoted to the publication and diffusion of such scientific observations as are of interest to planters in the West Indies. In the number before us we find articles devoted to the insects and fungi affecting Cacao and Sugar-cane, and other subjects, including a note on the formation of sugar, by Mr. W. FREEMAN, which is an excellent summary of the most recent investigations into the production of sugar. When the observations of scientific men are placed before the reader with so much clearness and accuracy, one cannot but believe that the practical cultivator will estimate their importance and adapt them to his own purposes.

THE FORMAL GARDEN IN ENGLAND.—A third edition of Mr. REGINALD BLOOMFIELD'S work has been published by MACMILLAN & Co. The author, alluding to the controversies between architects and landscape-gardeners, says "the question of design came fairly within the province of the architect." This, with certain limitations, may be granted, but it cannot be admitted for a moment that "design" is the exclusive privilege of the architect. It appears to us that the controversy will rage until each side defines more clearly than it has yet done what it means by a "garden." We turn to p. 232, and there we find the author stating his view that "the primary

purpose of a garden [is] as a place of retirement and seclusion, a place for quiet thought and leisurely enjoyment. . . . Everything was reasonable and unaffected." This sentence might have been written by a gardener; but when we turn from precept to practice, we find that the gardens which the author holds up for our admiration by no means fulfil the conditions he lays down. Everyone who walks in them must be in full dress, in wigs and furbelows, powder and patches. State and formality take the place of ease and recreation. We should not like to pluck a flower there, nor, so to speak, to think but by rule and compass. Probably this is not what the author means, but the illustrations he gives, and the examples he cites, convey that impression. We no more want a garden [so-called] made by an architect than we want a mansion designed by a gardener.

RAISINS IN CALIFORNIA.—The annual consumption of Raisins in the United States for the past five years has been about 80,000,000 lb., or not far short of 1 lb. per capita of population. Practically the total supply is home-grown. In England the average annual consumption is upwards of 5 lb. per capita, and the total supply comes from Southern Europe. The American fruit is entirely furnished by California, the only Raisin-producing State in the Union.

ROYAL APPOINTMENT.—We understand that Messrs. DICKSON & ROBINSON, of Manchester, have by royal warrant been appointed seedsmen to His Majesty the KING. They for many years held similar appointments to H.M. the late Queen VICTORIA and H.R.H. the Prince of WALES.

BOTANIC GARDEN, BRUSSELS.—We learn that M. DE BRAND has been appointed Director of the Garden in place of M. CRÉPIN, resigned through ill-health.

MR. FREDK. W. MOORE, of Glasnevin Botanic Gardens, was married to PHYLLIS PAUL on Nov. 19 at Rutland Sq. Presbyterian Church, Dublin. The happy pair left for England and the Isle of Wight, followed by the best wishes of their many friends. The Council of the Royal Horticultural Society of Ireland, the Microscopic Club, the officials and workmen at Glasnevin, &c., presented Mr. MOORE with plate, binocular glasses, &c., and there were many souvenirs from private friends.

THE BIRDS OF YORKSHIRE.—The Executive Committee of the Yorkshire Naturalists' Union invite subscriptions for the publication of the work which has been and is still in preparation, first by Mr. W. EAGLE CLARKE, and afterwards by Mr. THOMAS H. NELSON. The present work is based upon an unrivalled and exceptionally complete mass of material, both published and unpublished, which is now at the author's service.

FOGS.—London has no monopoly of fogs. The Chrysanthemum show in Paris was spoiled by the "intense and penetrating fog" which rested over Paris during the time of the show, and to a large extent prevented the hoped-for influx of visitors.

PUBLICATIONS RECEIVED.—*The Agriculturist's Journal*, *Cape of Good Hope*, October 10, devoted to notes on crops, stock-farming, dairying, forestry, and horticulture.—*The Agricultural Gazette of New South Wales*, September; among the contents are an ordinary notice and portrait of Mr. James Stephenson; and articles illustrated dealing with Root-kill, Cabbages for heavy cattle, Experiments with Wheat at Mount Templeton, Pear and Cherry slug and Australian Saw-flies, Cancerous Disease of the Vine, Guinea Grass, &c.—From the United States Department of

Agriculture come. Farmers' Bulletin, No. 199, *The Mexican Cotton-bull*, by Frederick W. Mally, Farmers' Bulletin, No. 192, *The Principal Insect Enemies of Georgia Wheat*, by C. L. Mott, and Division of Entomology, Bulletin No. 25, *Some Insects Injurious to the Citrus*, *How to Kill them*, *Practical Points*, by F. H. Chittenden.—*Journal Horticult. and Agric.*, November 1. This includes the *complete contents* of the general meeting, and various articles and notes on horticultural matters.—*Journal of Agriculture Tropique*, October 31, includes papers on Castiloba as a Rubber Producer, Knives for Reaping high-growing Cacao, Tobacco in Madagascar, Agave americana as a Fibre Plant, Paper from Sugar-cane, &c.

PLANT PORTRAITS.

- ALNUS INCIDENTALIS.—*J. Soc. Hort. Theems.*, 1, 75.
- APPLE, HOOVER, *Revue Hort.*, Nov. 15. A South Carolina Apple introduced into France by MM. Simon Louis, of Metz. The Fruit is of first-rate quality, and is in season in October. It is of medium size, oblate, deeply depressed at the apex, with a red skin decked with yellow.
- MARA MICHOPHYLLA, Hook. & G.—*J. Soc. Hort. Theems.*, 1, 71.
- BOWKERIA TRIPHYLLA, Huxley. *J. Soc. Hort. Theems.*, 1, 74.
- COBOLIA COMPRENENSIS RAOUL.—*J. Soc. Hort. Theems.*, 1, 73.
- EUCALYPTUS LECOCYALOS, *Revue Hort.*, November. A pink-flowered Eucalyptus with narrow, lanceolate acuminate leaves.
- ECONYMUS VAGANS, Wallich.—*J. Soc. Hort. Theems.*, 1, 77.
- JAOBIMIA POLIHA, Hiern.—*J. Soc. Hort. Theems.*, 1, 76.
- MARANTA LEUJAIANA, Hort. Linden, *Revue de Horticult. Belg.*, November. Leaves on long red stalks, corolla ovate, acute green above, purplish-red beneath.
- NYCTALIA VERMILIONIS, Torrey and Gray.—*J. Soc. Hort. Theems.*, 1, 72.
- OEOGONAX FERMINIUM, E. Marchal. *J. Soc. Hort. Theems.*, 1, 72.
- PEAR, COMFESSÉ HEAVY DE GOUSSENGOUELT. *Bulletin Arboriculture*, &c., &c., November. Of medium size, deeply coloured on the sunny side, a fine-tone, flesh delicate, juice abundant, sweet. Season October.
- PEAR, FIN DE SIECLE. *Bulletin Arboriculture*, &c., &c., October. A new fruit of large size, symmetrical form, golden-yellow, flushed with red; flesh white, sugary, slight acidity. Season October.
- PERALGIONUM FERTILICUM, Willdenow. *J. Soc. Hort. Theems.*, 1, 75.
- PRINUS VERTICILLATA, Michaux. *Monthly*, November. A Holly-like shrub with red berries in winter, which constitute its chief merit as a garden plant.
- SCHUBERTIA GRANDIFLOA, Martens. *Garten Flora*, Nov. 1. A climbing A-leopard with hairy leaves, and large, waxy-white flowers, like those of a Stephanotis.
- WESTRINGIA ROSMARTINIFORMIS.—*J. Soc. Hort. Theems.*, 1, 80.

A NEW RACE OF HYBRID ALPINE IRISES.

[SUPPLEMENTARY ILLUSTRATION.]

This addition to the race of early spring-flowering Irises is the result of many years of experiment in hybridising Irises, undertaken, in so far as the plants of this section of Iris is concerned, with a view to the improvement of that very promising little group of dwarf bearded Iris which are the first of all the rhizomatous Irises to bloom in the spring, and are included under the names of biflorous, Chameiris, Obiensiis, pumila, &c., which have one or two varieties names to add to their list, but were still very limited both in number and in the range of colour they presented, having nothing of the gorgeonsness that the numerous varieties of tall bearded or "Flag" Irises had accustomed us to connect with the word Iris. This lack of variety in colour was a considerable bar to any chance of popularity they otherwise deserved—and that they did deserve it was evident from their many other qualities: their freedom in blooming, their acceptance of and delight in a windy, exposed position, where other plants could not thrive; their hardiness, and power to withstand extremes of weather, flourishing on a dry bank where grass was unhappy, and being withal, at every season of the year, neat and cheerful-looking plants, with a pleasant contrast of character in their foliage to all other plants in the border, looking after themselves for the most part, and satisfied with an occasional clean up of weeds and dead leaves, happy in the privilege of being let alone.

THE COLOUR PROBLEM.

Questions which had to be considered at the outset were: What should be done to impart new colours, and to improve the old? Would Nature herself do it by simple inter-crossing? Was the artist's pigment theory one that might be reasonably expected to act? or was the scientist with the spectrum right? for very queer things arise from the admixture of spectrum colours to the eye of Art, and that Nature herself was perfectly independent of any calculations on the matter was evident from the way she produces brilliant scarlet, as in the Pelargonium, &c., when a pure white-opaque ground is covered with a thin skin of dingy, semi-transparent material which works the miracle—none could not hope to even remotely follow. However Art stuck to its colours, and the event proved reliable, the pure whites must be set to the credit of Nature alone, and both the yellows, the purples and blues shaded with these as was expected through Art experience. Crimson, rich yellows, and bronzes had their rudiments in plants of species which were either wholly new, or had been previously unobtainable; and to whose aid I was, as must be surmised, entirely dependent upon the liberality, kindness, and interest of Sir M. Foster. With these new means at hand the possibilities of success were greatly forwarded. Many things which had previously seemed hopeless became accomplished facts, though not all at once visible, for Iris raising is a matter of many years' patience, and many pleasant surprises began to arrive.

DESCRIPTION OF THESE IRISES.

To describe the Irises which are the result of this inter-crossing of species, which, as regarded their parents, hail from all the alpine and sub-alpine districts of Europe, I have ventured to call them hybrid alpine Iris. One must say that they are rhizomatous plants, with practically evergreen leaves, four or five to a tuft, thin, flat, sword or sickle-shaped, 3 or 4 inches long at flowering-time, afterwards prolonged to 6 or 8 inches, and from half an inch to 1 inch wide, growing out towards the end of the rhizome on all sides, so that the tendency of the plant is to form a circular patch. The flowers are produced in early spring, as soon as the weather breaks and will allow of growth to be made, upon stiff, succulent stalks, which enable them to remain fresh for a long time without water after being cut, and standing from 4 to 8 inches, or in the tallest, 10 inches in height. The flowers are large, often larger than the plant which produces them, and are of singular shape to the German or summer-flowering Iris, with three-upright petals, the standards, which in some of the varieties, however, lay flat open, and expose the 3-petaloid styles to view; the three lower petals, or falls, are pendent, sometimes contracted and tucked in, so to speak, and they all have a more or less conspicuous white, primrose-yellow, rich orange, or blue beard.

THEIR COLOURS.

In colour they range from the purest of white selfs, white standards and cream or yellow falls, white and blue, white and violet and purple, each being white, yellow or orange bearded; primrose-yellow self, cream and canary-yellow to rich yellow, with conspicuous orange-scarlet beard; blues from the palest porcelain to deep blue-purple, lavender, violet-purple and crimson self, and bronze and almost black. These, with many changes of smooth or folded petals, long or round, plain, unmarked, or covered with lines, dots, and tracery, make up a sufficiently varied amount of combination and change to please a

fastidious taste, and all of them together maintaining a constant relay and succession of flowers from very earliest spring to the end of April or early in May. Indeed, if the weather is mild, they will begin during October, November or December to throw up fitfully one or two flowers.

AS A NEW FORCED FLOWER.

They have proved a welcome addition to greenhouse (either slightly heated or cold) decoration, they occupy but little space in small pans or 3-inch pots; and if in clumps larger sizes may be used, but they require very little soil whilst in pots, and are very impatient of much water until growth has well set in, so that it is best to err on the safe side. It grown in quantity for cutting, shallow boxes are equally satisfactory. In heat they will bloom from January to the end of March; in a cold-house they commence early in March or end of February, and continue through to April. In all cases plenty of air should be given, especially when in bloom; for if in a close, stuffy temperature, a minute fungus besprinkles both the petals and leaves, and the remedy is, of course, ventilation. They do not make satisfactory growth in pots, pans, or boxes, and so they should be hardened off and replanted in the open ground as soon as the weather will permit, for it must be remembered that they are hardy plants, accustomed to a rigorous climate.

FOR SITUATION AND SOIL.

A free, rather gritty soil is perhaps the best, and provided there is no stagnant moisture about, they are not exacting; they have thriven in a stiff clay in a windy, exposed, and sunburnt situation, and in ordinary garden loam. Their roots are voracious feeders, and quickly interlace in all directions where the plant is happy; but if they get a rather dry, sunny bank, where it is too hot and dry for most things, their growth may be much smaller, but their flowers will gain greatly in refinement. There is, in fact, no difficulty about their culture, provided that it be understood. Weeds and the shade of trees or large plants are quickly fatal to them, as is stagnant moisture; but beyond this, they are happy almost anywhere—on rockwork, as edgings, small borders, old walls, &c.; and as they are small, bright green plants, they give an added charm to any situation they may occupy.

Their enemies, other than the conditions above stated, are chiefly the winter-slug, snails, and woodlice, the first two being very destructive. The latter is very insidious and troublesome if not looked after when the plants are grown in dry situations, as it makes its home underneath the rhizomes, or in the interior of the older decayed ones in the centre, and feeds on the budding tips of the new roots just at the end of the advancing rhizome, which of course prevents its growth altogether; but these can be trapped or otherwise kept down, should they make their appearance.

In conclusion, it is hoped that they may prove useful, satisfactory, and popular plants, for there are no special cultural difficulties connected with their culture, as is the case with most of the bulbous Iris, together with the magnificent group of *Oncocyclus* Iris. With the new hybrids of "intermediate" Iris, which have caught the larger habit and flowers of the later, tall, bearded, summer-flowering Iris, together with many of their colours, but which have placed themselves in time of blooming in front of *I. germanica*, the tall, blue flag, whose group furnishes the advance guard of summer Iris, we may have a continuous display from the earliest days of spring, that endures without a break up to August. W. J. CAPTAIN, *Greensey*.

NURSERY NOTES.

SEEDLING POTATOS AT READING.

SOME two years ago the results of some interesting and valuable Potato crosses, which had been effected by Messrs. Sutton & Sons, of Reading, were described and remarked upon in these pages. What was then observed in the stores of the firm was the produce of several crosses in their first and second years' development. Even at that time there was so much that was remarkable in them, that the editor expressed a desire to see them again after trials had been made under ordinary cultivation.

A short time ago, when happily fine and dry, we again saw these seedlings, but then as just dug up, and lying on the ground. During the two years naturally some of the least promising had been eliminated, but still there were scores of diverse varieties left, and the trial of seedlings alone was a most extensive one. When it is understood that of ordinary commercial stocks the annual trial, in rows of equal length, and grown under precisely similar conditions, runs up to a thousand, it is easy to understand how extensive are the Potato trials at the firm's seed-farm. In the case of these seedlings, scores of diverse ones as they were, the greatest possible care had been taken to select from every one twelve tubers, so that each dozen weighed just $1\frac{1}{2}$ lb., or an average of $2\frac{1}{2}$ oz. each. All were planted at the same time in the spring, in rows some $2\frac{1}{2}$ feet apart, on ground that had been deeply ploughed, and to which a light dressing of animal-manure had been added. The culture was practically that of the field, and not of the garden, as the ground is neither trenched or dug as good garden-ground is. Planted with so much care and precision, it was most easy when the tuber produce in each row was lifted to test the merits of each seedling. But to increase the value of that test, close by were planted in exactly the same way twelve tubers of the same size of well known commercial varieties, such as Up-to-Date, Reliance, Windsor Castle, Abundance, Supreme, Ninetyfold, Flourball, and others. Attention was first drawn to these that their produce might be noticed. Then it was compared with that of the myriads of seedlings that in their separate rows lay on the ground. One feature of these was their general roundness; that was markedly the case from the finest cross of all, viz., Up-to-Date and the Sutton Flourball.

Surprisingly few were coloured: indeed we saw only one, a most productive red kidney; but the majority were not only round, but had most handsome tubers, and not one had in any way super-tuberculated, as is so commonly the case with kidneys. Then as compared with the produce of even so great a cropper as Up-to-Date, there were many of its progeny that fully doubled it in productiveness, the tubers of good size, in remarkable abundance, and some even much finer, whilst all of them showed that netted skin we used to be so familiar with in the old Regents, and which always indicates superior table quality.

Other crosses were: the Sutton Flourball and Windsor Castle, Early Puritan and Early Regent, Reliance and Flourball, and others. It was impossible to look over this remarkable collection of seedling Potatos without coming to the conclusion that the firm has in them "struck oil": for whilst we seem to have in commerce to-day splendid croppers, no one can say that the perfect Potato is yet supplied.

Apart from these test rows, there were to be seen also the produce lifted of many similar rows in breadths of the most prolific of the seedlings, and what was seen in these breadths showed that the test rows gave absolutely correct examples. Of one seedling 10 lb. were sent out to a well-known gardener at Newbury to test on good garden ground, and his result by simply planting the tubers as sent, and in no way manipulating them, as was done in a famous competition many years ago, was to lift a splendid crop of 17 bushels, 35 lb. That was in all 985 lb., or just about one - hundred - fold increase. But Messrs. Sutton & Sons, in conducting their enormous Potato trade, in this autumn sent out hundreds of tons of seed tubers to South Africa, packed with the utmost care in boxes and hampers, have in their minds in the

pronounced eyes. There are some amongst these round seedlings that seem as if they would fit the Irish taste exactly, whilst perhaps not quite refined enough for British taste; yet, after all, they may be of splendid quality. That a famous "Shamrock" may be found amongst them for Ireland's benefit is our earnest wish. But whilst the crosses so far mentioned cater chiefly for the production of mid-season and late varieties, and many stocks of these latter had yet to be lifted; crosses to secure finer first earlies than we now have were also seen in their first year's cropping. Some produced no less than from 10 to 50 tubers, the first year, to the single plant. It will be no surprise if some very fine varieties are found amongst them. Let no one imagine the Potato is played out; certainly that is not the belief of the great Reading firm. Evidently it has yet a wonderful future.

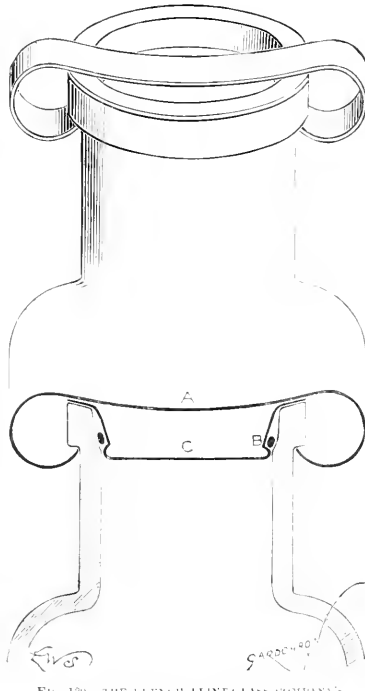


FIG. 120.—THE FRENCH FLINT-GLASS COMPANY'S STOPPER FOR PRESERVE-BOTTLES.

WHOLE-FRUIT PRESERVING.

THE upper diagram in fig. 120 shows the neck of a jar or bottle, with its tinued steel cap in position, held firmly, yet allowing for the escape of steam, by a simple clip of steel, during the process of boiling, in the case of whole fruit. The lower diagram gives a transverse section of the same: A, the clip to be removed when the contents cool; B, a thin ring of india-rubber; C, the cap of metal. During the process of cooling a vacuum is created in the bottle, consequently the pressure of the outer air suffices to close the cap and hold it tightly till an aperture be made with a fine bradawl. The caps will serve for many years, if before making use of them the awl-holes are closed with solder.

HOME CORRESPONDENCE.

GRAPE KEMPSEY ALCANTE.—In my notes on "Old and New Grapes," through a misprint, doubtless the fault of my cartography, I am made to refer to this Grape as "delicious." That term must have seemed an odd one to use when the context was read. The word I really wrote was "dubious," indicating both its doubtful value and its identity. There is only one Grape in the list published last week that so far has not yet had an opportunity to be fairly tested: that is the black Prince of Wales, to which an Award of Merit was granted on September 25 of last year; and until it is in commerce, and generally tested, it may be difficult to pronounce satisfactorily its merits. It was described as a sport from Mrs. Pince, "having large, oval blue-black berries, of very good and slightly Muscat flavour." That is a very good character, and if in commerce it be well maintained, then it may in time become a standard variety. I have thought that just now, with the Grape season closing in, it may be worth while to invite from Grape-growers for private consumption a census of the best six blacks and four whites in commerce. It would be so interesting in that way to learn how far we had got in the improvement of Grapes during the past thirty years. Black Hamburgh has been with us some 200 years, Madresfield Court some thirty-three years, Muscat of Alexandria time out of mind, Black Alicante the same, Alwick Seedling thirty-five years, and Lady Downe's over fifty years. A. D.

CAMPANULAS RAPUNCULOIDES AND GROSSEKIN.—Like your correspondent "R.," I am sorry to see that Mr. Mott, whose articles I always read with pleasure, recommends *Campanula rapunculoides*. Speaking for myself, I would gladly get rid of it if I could, and I have been keeping it down in this garden for some seventeen years. It was here when I

crosses they now have some consideration for the requirements of other countries—the needs of France and the Channel Islands for early marketing, and not least the requirements of Ireland, where certain descriptions of strong-growing, heavy cropping round Potatos are greatly in demand.

We had the pleasure when at the Reading Farm of meeting Professor Campbell, the head of the Irish Department of Agriculture, who is deeply interested in Irish Potato production. It was instructive to see lifted in his presence roots of the old Champion, Champion 2nd, and the well-known Sherry Blue, and then compare the sample of tubers (deep-eyed, un-gainly and wasteful, and here not large), with the superb tubers lying so densely on the ground, produced by the seedlings that have been referred to. Irish people do not like Kidney forms, and they have a fondness for tubers having if not deep at least fairly well-

came, and it looks as if it would remain long after my gardening days are over. In one small bed it has become such a nuisance that I must face the necessity of taking everything out, although there are things in it which should not be removed any oftener than one can help. I expect I shall have to remove the most of the soil before putting anything else in. C. Grossekill is little better, and a plant introduced some years ago, unwitting of its running habits, has given one much trouble. Neither of these should be planted where they are likely to get among other flowers. S. Arnold.

A BOTTLE-BRUSH TREE AT TORQUAY.—I have a plant of *Metrosideros* growing in my garden at this town (fig. 121), between 8 and 9 feet high. It flowers profusely each year. It is quite in the open, uncovered in the winter, sheltered by house and terrace from the north, but quite open to the east and

it produced a growth from the top of the bulb. In both these cases no water was given before the growth was visible, and I fail to see why water is wanted, unless it is to rot the dormant eye; they cannot derive any sustenance from the water, and if there is any life at all to produce a growth, that growth will come if no water be afforded. Another method I have successfully followed is to nearly sever the rhizome stem at the centre, between the portion to be cut away and the plant that remains, and leave it on the plant till the young growth from the back portion shows signs of moving. Success is almost certain to follow this method, and I usually adopt it, unless when we are putting a plant, that if I left on all the back bulbs it could not be got conveniently into the pot or pan I considered large enough for it. In such a case I cut them off, and hang them up in the way described by Mr. O'Brien. The same

precautions, the plants should bloom as satisfactorily as those in his neighbours' gardens. Here I use no manure for Violets, and they are grown from start to finish with leaf-soil as the staple, which is the best for them here; and grow from 500 to 600 annually from runner, planted out the first week in April, and planted in the frames for winter in the first half of September. A. S. Cole, *Monterotte Gardens, Bridge-of-Earn, N.B.*

THE ASPECT OF SPAN-ROOFED GLASSHOUSE.

—The aspect of a house of this kind (see page 316) will depend to a great extent on the plants which are intended to occupy it. If it is for fruit-trees, or Vines trained up near the glass, it ought to run north and south, so that each side of the roof may get an equal amount of sunshine. If the house is to be filled with fruit-trees in pots, it is not so important, because the root would not be shaded, and the plants on the north side would get the sunshine through the south side; but much attention should be paid in regard to ventilation and other requirements, and the house must be of a fair size, as small ones become too hot in the summer. Cherries, Tomatoes, and Melons will ripen in the summer months quite as well on the north side of a span-roof as they do on the south, provided other conditions are suitable. Roses, especially *Marechal Niel*, are of little use on the north side of a span-roof, as the plants flower sparingly, owing to the insufficient ripening of the wood. For plant culture in pots, in the summer, span-roofed houses running east and west are very difficult to manage, especially when they are small; requiring much shading, damping down, and airing, and a genial, moist atmosphere can only be maintained in them at the cost of much labour and attention. In changeable weather, during early summer, they are more liable to accidents from scorching, as the temperature rushes up quickly when the sun bursts out suddenly; and in the heat of summer the plants in them are very liable to be infested with red-spider and other insects. For obtaining fruits or flowers in winter or early spring, houses running east and west are undoubtedly best, the supply of sunshine in our fickle climate being all too small even when every gleam is made the most of; and although span-roofed houses can be used for winter work when running in this direction, good flowers being grown on the stages on the north side, it is yet more economical to have lean-to houses for this purpose, with the back wall running east and west. By this means shelter is obtained from north-east, north, and north-west winds, and the sun-heat is conserved with greater effect. To sum up, if only one house is obtainable, and it is a span-roof, it should run north and south for plant culture; if it is intended for fruit, it should run north and south, unless it is for pot fruit-trees, when it is possible to succeed with one running east and west. When several houses can be arranged, either for plants or fruit, it is best to have the majority running from north to south, with one or more for winter use running from east to west, and for the latter the lean-to house is the best. W. H. Divers, *Belvoir Castle Gardens, Grantham.*

DRIED PLUMS. I have read with interest the letters that you have published on the subject of dried Plums. It seems to me that "A. D." has missed the point of the advocacy of evaporating fruit. If we can get 1 lb. per lb. for the fresh fruit, we shall not want to dry it. The possibilities of this method lie in the fact that it is a prevention of waste. It is not intended to be a method of making anyone's fortune, in accord with the remarks of the "Member of the Committee" quoted; nor is it suited for large factories. We have to teach that it pays to grade fruit, even at the cost of throwing away the rejected. This is no worse than the rest, except that it is small. Then the evaporator is another string to the bow of the grower; therefore the cost of the fruit that goes to the evaporator is almost



FIG. 121.—METROSIDEROS IN THE OPEN AIR AT TORQUAY.

south-east winds, except for the cover of a hedge about 20 feet distant. In answer to a question a few years ago, a leading Exeter nurseryman told me that it would grow in the open on the south coast, but that I must not expect it to flower! R. A. Clark.

CHCERIA POPULNEA.—In reference to this New Zealand flowering shrub, so well illustrated in your last issue of the *Gardeners' Chronicle* (supplementary illustration), I should like to say that the plant itself now growing and flowering here was presented by Mr. Thomas Smith, Daisy Hill, Newry, who had received it from New Zealand seeds. I am very pleased the plant has flowered here last year (1900) and this (1901), but Mr. Smith really deserves the credit of its introduction, so far as we here are concerned. Having fertilised some of its flowers, which are, moreover, very attractive to flies, the winged fruits are now developing, and we hope that good seeds may ripen. F. W. Burbidge.

THE BACK PSEUDO-BULBS OF ORCHIDS (see page 377).—Another case is that of a back pseudo-bulb of a plant of *Lycaste Skinneri* alba removed this season; it had no eye at the base, as the bulb was badly diseased; we laid it on a stage quite dry, and

method I like for increasing the stock of *Odontoglossum*, namely, to nearly sever the portion desired to be taken away for the well-being of the plant. But do not think that the back pseudo-bulbs of *Odontoglossum* which have been cut off can be kept too dry. It is surprising how quickly these propagated plants develop into fine and very often more vigorous plants than the ones from which they have been taken. I think Mr. O'Brien should have the thanks of Orchid-growers for opening up this discussion as to the desirability of leaving on back bulbs, and of propagation by means of these which have generally found their way to the stake-hole. W. P. Bond, *Gatton Park Gardens, Reigate.*

VIOLETS NOT OPENING THEIR FLOWERS.—I would ask your correspondent, "B. C.," who writes that his Violets do not open their flowers in the winter months, if his garden is a low-lying one? If so, he should have his frames of Violets in the highest and sunniest position in the garden; affording the plants plenty of air night and day in mild weather, planting them so that they are within a few inches of the glass. The compost should consist of loam and leaf-mould in equal proportion, with some coarse sand or road-grit to keep it open. The light should be kept quite clean. With these

24. When the fresh fruit pays us in the market we do not want to be bothered with evaporating. Last season, however, the market price of good Plums was less than $\frac{1}{2}$ per lb. Had only the best been sent, there might have been a better return. To this the evaporator is an aid. Then the dried product will pay, even if it does not fetch the high prices that we have read of. I may add, that both my dried Plums and Damsons are free from toughness in the skin when cooked. The dried produce will, from the reasons given above, never be in great competition with the bottled fruit, which is from first to last, or ought to be, essentially a high priced thing to touch: except that at present the grower has no means of defence against the low prices that obtain in the markets. When, however, by the aid of co-operation he can have his evaporators (which do not call for great outlay, or expense in working, nor demand a highly skilled attendant), there will be another aspect to this question. When, too, it becomes known that there is not only nothing added to the dried fruit, but that it is actually richer in food constituents than the fresh, then perhaps the cause of the grower will find more advocates than it has to-day. The prices that Mr. Udale quoted, though not the wholesale ones, seem to me to be absolutely fair for his object, viz., comparison. I may add that the list of produce suited for drying is a long one, and that our army in South Africa has been supplied with tons and tons of foreign dried vegetables, &c., which might have been supplied at home. *G. F. E.*

CEROPEGIA.—It may interest "J. C." (see *Gardeners' Chronicle*, p. 358) to know that I have a plant here of *C. stapeliiformis*, which exhibits the same flattened or crested form of growth, but evidently in a more marked degree, as that which he described in last week's *Gardeners' Chronicle*. The plant was procured about two years ago from a continental firm. It appeared to have been grown from a cutting to the height of 6 inches, in an upright manner; the growing point then commenced to grow flat in the form of a coxcomb, and then afterwards it formed from one end of the "coxcomb" a normal growth which grew downwards; this growth was about 9 inches in length when we received the plant, it is now 2 feet in length. The crested growth continues to grow, and is now 4 in. long, $\frac{1}{2}$ in. high, and $\frac{1}{2}$ in. thick. I have not succeeded in flowering this plant. As to the downward growth, it is characteristic of this species, so far as my experience goes. I have recently received two other plants from the continent under the same name, but they appear to be of a different species; the nodes are further apart, and there are only three leaves at each node. In the plant described above there are four leaves, which are arranged at regular distances round the stem. The habit of them is like *C. Sandersoni*, but the stem is mottled, though not so dark as *C. stapeliiformis*. Are these two plants *C. stapelioides*, or is the name a synonym of *C. stapeliiformis*? "J. C." does not say if he obtained the seedling from his twining plants. I assume that two different plants are sold on the Continent under each name, and that "J. C." may have been served the same as I have been. My experience is that some of these continental dealers are not too particular in sending plants true to name. *Arthur Cobbold, gr., Holly Point, Heaton Mersey.*

WINTER WASHING OF FRUIT TREES

The following notice, being leaflet No. 70, to fruit growers, has been issued by the Board of Agriculture:—

"A neglected orchard not only harbours all manner of insect enemies during the winter, which come out in the spring and commence their ravages in that particular orchard, but it forms a nursery or breeding-ground from which other orchards are supplied with noxious insects.

It is desirable, therefore, that all such orchards should be treated in some way to stop the damage that is caused by the various insect pests they encourage.

For this purpose a caustic or burning wash known as Caustic Alkali-wash is most successful. This mixture serves a double function. It removes, by means of its caustic properties, all vegetal incumbrances, moss and lichens; and at the same time it causes all rough and decaying bark to fall off. A tree so treated soon assumes a more healthy appearance. By the removal of the moss and lichen from the trees, the favourite quarters of many hibernating insects are destroyed. The Woolly-aphis, the Apple Blossom-weevil, the Earwig, the Codlin-maggot, Thrips, and numerous other small insects, are found during the winter beneath the vegetal growth and rough bark on fruit-trees. The destruction of their winter quarters places these often serious pests at a disadvantage, and they cease to multiply abnormally.

Scale insects, of which two at least are more or less harmful in this country, namely, the Apple Bark-louse or Mussel-scale, and the Brown Currant-scale, may also be destroyed by caustic alkali-wash.

Not only are moss and lichens and the insects referred to above destroyed or stopped from excessive increase by this wash, but it acts also in another way by attacking the eggs of certain species. The extent of its action on the eggs has not, however, been fully determined. Groups of the eggs of the Apple-sucker (*Psylla Mali*) treated with it were all killed, as also were those of the Red-spider—a species of *Bryobia*—on fruits, and those of certain aphides. Spraying the wash over eggs recently laid had little effect on them, but, when the embryos were nearly matured, the majority of those of the insects mentioned above were destroyed.

At present, therefore, the wash is mainly recommended for cleaning the trees in an orchard, and thus destroying the shelter of various insects during the winter, and for killing certain hibernating pests themselves, as the Codlin-maggot, Woolly-aphis, & others. It certainly has no effect in the open on the ova of the Winter Moth, Lackey Moth, and those of certain plant lice.

Caustic alkali-wash has a most beneficial effect on both old and young orchards in which the trees are infested with moss and lichens and with Woolly-aphis. The best time to spray the trees is about the middle of February, as the eggs of some insects and mites are then more likely to be affected than earlier in the winter, and it is not so late in the season as to harm any developing buds.

To prepare caustic alkali wash, first dissolve 1 lb. of commercial caustic soda in water, then 1 lb. of crude potash in water. When both have been dissolved, mix the two well together, then add $\frac{1}{2}$ lb. of agricultural treacle, stir well, and add sufficient water to make up to 10 gallons.

As the wash has a burning effect on the hands, care must be taken in employing it. Rubber gloves are sometimes used to protect the hands, but these, unless close fitting, allow the wash to run under the rubber, and more harm is done than usual. With ordinary care the sprayers need suffer little inconvenience.

TRADE NOTICE.

THE title of the firm Herb & Walle, Naples, of which Mr. M. Herb has been the sole proprietor since October 1, 1895, has been changed to M. Herb, Naples, Seed and Bulb Grower.

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 26.—A meeting of the Committees of this Society took place on Tuesday last, in the Drill Hall, Buckingham Gate, Westminster, and a good display for the present season was made.

Orchids were shown in considerable numbers, and included cut flowers of a great variety of Cypripediums.

THE FLORAL COMMITTEE recommended two Awards of Merit to novelties, one to a new variety of Messrs. JAS. FITCH & SONS' winter-flowering Begonias, and another to a remarkable variety of the Hartstongue Fern. There were groups of well-flowered plants of *Begonia Gloire de Lorraine*, including yet another reputed sport from this variety; a magnificent group of zonal Pelargoniums from Captain HOLBORN, and flowers of *Chrysanthemums* from various exhibitors.

THE FRUIT AND VEGETABLE COMMITTEE recommended no awards to novelties, but awarded a Gold Medal to an extraordinary collection of vegetables from Lord ALDENHAM's garden. A fine collection of Apples came from Messrs. H. CANNELL & SONS, and choice Grapes from the Earl of HARRINGTON's garden. There were four exhibits of bottled fruits, one of them being a needlessly large one.

In the afternoon a LECTURE was given by Mr. J. E. AUSTIN upon "Fruit Preserving in Relation to Fruit Culture" (see p. 384, before a large audience. Mr. Austin described the pecuniary advantages to be obtained from a proper system of preserving fruits, but afforded no information whatever upon the methods of doing this. Some of the Fellows had travelled considerable distances in the hope of hearing a better system than they at present practice, and there was some disappointment expressed, the lecturer's reticence meeting with general criticism. The exhibits of fruits were instructive.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Chas. T. Drury, H. B. May, R. Deao, H. Selve Leonard, James Hudson, J. F. McLeod, John Jennings, W. Howe, C. R. Fielder, Chas. Dixon, G. Renthle, C. Blick, C. J. Salter, R. C. Noteutt, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, M. J. James, O. Thomas, Jas. Walker, J. H. Pitt, and E. T. Cook.

A magnificent group of zonal Pelargoniums, in pots, was shown by Captain HOLBORN, C.I.E., Westonbirt, Tetbury, Gloucestershire (gr., Mr. A. Chapman). These plants filled one side of a long table, and presented a very beautiful display of flowers. Most of the plants were in 7 or 8-inch pots. Conspicuous amongst the varieties were those following:—Crabbe, a single flower, rosy-pink in colour, very large; Mrs. Simpson, white, with pink eye; Mary Hamilton, crimson, shaded purple; Norah, delicate pink colour; Barbara Hope, very large, pink; Chaucer, of largest size, of rosy-pink colour; Mark Twain, salmon-rose colour, mottled with white, especially towards the centre; Mrs. Williams, rosy-violet colour; John Milton, vivid scarlet, with white eye; Mrs. E. Rawson, scarlet, and many others (Silver-gilt Flora Medal).

Messrs. W. WELLS & Co., Earlwood Nurseries, Redhill, Surrey, made an exhibit of *Chrysanthemum*-blooms, including late flowering exhibition and a number of decorative varieties (Silver Banksian Medal).

Mr. R. C. NORRUTT, Wood's Nursery, Woodbridge, and Broughton Nursery, Ipswich, exhibited a very pretty collection of single and decorative varieties of *Chrysanthemum*, the flowers having a very fresh appearance, and possessing bright colours.

Miss EAS-FERBROOK, Fawkham, Kent, exhibited two baskets decorated with *Chrysanthemum*-blooms.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited three very fine blooms of *Chrysanthemum* General Hutton, a Japanese variety in the way of Le Grand Dragon, but distinct from that variety. No award was made to it, but for exhibition purposes the variety is one of the best novelties of the year.

Chrysanthemum Kingham Glory is a fine decorative flower of warm pink colour, 5 to 6 inches across, shown by E. J. JOHNSON, Esq., Rugham Hall, Bury St. Edmunds (gr., Mr. J. Deig).

Mr. ROBERT HOLMES, Norwich, exhibited blossoms of a new Japanese-invented *Chrysanthemum*, Miss M. B. Holmes. It is nearly the same colour as *Phobus*, of considerable size, and much incured.

A collection of flowers of *Pompon Chrysanthemum* was shown by Lord ALDENHAM, Aldenham House,

Elstree gr., Mr. Ed. Beckett. There were about fifty varieties shown in neat little bunches in nice condition (Silver Banksian Medal).

Begonia Gloire de Lorraine, so frequently exhibited at these meetings, was shown in glorious condition on this occasion by E. A. HANBRO, Esq., Hayes Place, Hayes, Kent gr., Mr. W. Beale. About twenty of the plants were staked up in the ordinary way, and two others were suspended. All of them were abundantly covered with blossoms of the best colour; the suspended plants with the growths hanging around the sides of the pot showed how suitable this Begonia is for such a purpose (Silver-gilt Banksian Medal).

Messrs. J. CARTER & Co., High Holborn, London, showed a few plants of Chinese Primula Crimson King, a single-flowered variety with exceedingly dark crimson flowers.

Mr. G. LANS-E. Hampton, exhibited a group of plants of Begonia Gloire de Lorraine, and of a sport from same under the name of alba grandiflora. This sport appeared to us as being between Caledonia and Turnford Hall, but as these varieties were not present for comparison, the Committee rightly made no award. The flowers are nearly but not quite white, and of considerable size (Silver Banksian Medal).

From the BRITISH CHALLENGE GLAZING COMPANY, Ltd., 11, Bernoulsey Street, London, S. E., were shown models of a new system of rafters and glazing to glass-houses. The rafters are made of steel, and are fitted with lead covering and cap, drawn out by hydraulic power. The system entirely prevents any possibility of drip, and when once erected, it is said to require no painting or other attention as long as the house stands. The primary cost would be 5 per cent. to 10 per cent. higher than the usual system.

Awards.

Begonia "Idéal."—This is a new variety of the winter-flowering section, raised by Messrs. James Veitch & Sons, Royal Exotic Nurseries, Chelsea, from crosses between *B. sacrotrana* and varieties of the tuberosus-rooted section. The plants shown were very distinct, not more than 6 inches high as a rule, and very neat in habit. The flowers are semi-double, about 2 inches across, of brilliant rose colour, and are so persistent that they shelve upon the plant (Award of Merit).

Scaberrima vulgaris var. *Tricardialis superba*.—A very prettily fringed variety of the common Hart's-tongue Fern, with profusion of the fringes. From Mr. CHAS. T. DREERY (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), Dr. B. Crawshaw, F. A. Rehder, W. Cobb, E. Hill, W. A. Binney, J. W. Odell, F. J. Thorne, W. H. Young, H. J. Chapman, J. G. Fowler, and H. Little.

Messrs. JAS. VEITCH & SONS, Chelsea, again showed one of their remarkable groups of hybrid *Laelia*, *Laelio-Cattleyas*, &c., with which the hall is often graced at this season of the year, for which a Silver Flora Medal was awarded. The group contained *Laelia Cattleya* × *Dona* and *L. C.* × *Semiramis*, two very showy hybrids of *L. Perrini*, *L. C.* × *Bryan*, like an improved *L. C.* × *Evoniensis*; the richly coloured *L. C.* × *Ballas*, *L. C.* × *Tresiana*, resembling one of the parents, *L. C.* × *elegans*, but with tubular, round-fronted, crimson-purple labellum; *L. C.* × *Ascania*, and *L. C.* × *The Hon. Mrs. Astor*; yellow-tinted hybrids *L. xanthina*, *L. C.* × *Epeasata*; *L. C.* × *Ophir*; *Lachia* × *Digbyana*-purpurata, with fine rose-veined flower, having a fringed lip; *L. S. Mrs. Gratix*, and others (see Awards).

G. F. MOORE, Esq., Bourton-on-the-Water, staged a very fine group of cut flowers of *Cypripediums*, including a fine collection of varieties of *C. insigne*, among which the Hatfield Hall variety was the largest, an excellent series of *C. × Lecanina*, *C. × Arthurianum*, and others, in all over 150 blooms being set up (silver-gilt Flora Medal).

Mr. A. J. KEELING, Cottingley, Bagley, was awarded a Silver Banksian Medal for good group of *Cypripediums*, including several yellow forms of *Cypripedium insigne* (the fine dark coloured *C. picturatum*, and the neat, well-formed *C. distinctum*, specially good in the group were *C. Menckii* (Doxall), *Calypto*, with shining, reddish-tinted flowers, the upper sepal of which was heavily blotched with blackish purple, like *C. Beckmanni*; *C. × radicans* (Charlesworthi) × *Spiraeioides*, like *C. Spectabilem*, with a *C. Charlesworthi* dorsal sepal; *C. × Eschmannianum*-*superbum*, a fine rose-tinted flower, with chocolate lines on the dorsal sepal; *C. × salteri* *superbum* and *C. × Lecanina* ("Keeling's variety," both good; *C. Nobile*, and some unnamed hybrids.

FRANK A. REHDER, Esq., Gipsy Hill gr., Mr. Norris, staged a group of *Cypripediums*, in which *C. Richesii* of unrecorded parentage was very fine. It had some resemblance to a large *C. nitens*, but with indication of *C. × Swinburnii*, or some kindred hybrid in the blotching of the inner parts of the petals. Also in the group were *C. × Lecanina* *Mascrobianum*, *C. × Pitherianum*, Williams' variety; *C. × Melan*, *C. × Arthurianum*, *C. × nitens* *superbum*, *C. × Behrensianum*, *C. × T. B. Haywood*, and several unnamed hybrids of superior merit. A Bronze Banksian Medal was awarded—not too appreciative a recognition of an important group in November.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell, Mr. H. J. Chapman, showed *Cypripedium insigne* *Arthurianum*, a fine, bold flower, with large dark-coloured markings in the fine dorsal sepal.

Captain HOLLOM, Westonbirt gr., Mr. A. Chapman, showed a hybrid *Cattleya*, almost identical with that known as *Cattleya nitida* *maculata*, or *C. intermedia* *pinetata*-*simplex*.

W. F. BIRBY, Esq., H. Binwade Grange, Shrewsbury gr., Mr. Taylor, sent spikes of *Cattleya labiata* "Edith" with a very finely coloured dark lip, and *C. L'Esion*, a large flower with a ribbon front to the lip and white margin.

Dr. B. CRAWSHAW, Esq., Basildon Sevenoaks gr., Mr. Stables, again showed the fine odontoglossum-crispum *Crawshawianum*, a very heavily-blotched and showy variety of established reputation.

Messrs. HOOD LOW & Co., Emlish, showed a fine plant of a supposed natural hybrid from Brazil as *Cattleya coccinea*. The plant had eight flowers closely resembling *C. basilion*, but with a slight indication of spotting on the petals.

ROBERT TINSLEY, Esq., Monkholme, Burnley gr., Mr. Balmforth, showed *Cypripedium insigne* *Sandera* *Monkholme* var., probably a home-raised seedling, with clear yellow and red flowers of perfect form. Also two fine hybrids (see Awards).

F. WELLSLEY, Esq., Westfield, near Woking, showed *Cypripedium* *Masseyana* (W. E. Dicks) with one flower on an imperfectly developed spike.

Awards.

FIRST CLASS CERTIFICATE.

Laelia Cattleya × *Semiramis* *speciosa* (Perrini) *C.*, Askellham, from Messrs. JAS. VEITCH & SONS, Chelsea. The largest and showiest of the 1 Perrini hybrids. Sepals and petals slightly variegated with rose, front of lip purplish-rose. The original variety in an unobscured state (Award of Merit on November 2, 1899).

AWARDS OF MERIT.

Cypripedium *H. J. Keeling* (Chautau) *bellatulum*, from ROBERT TINSLEY, Esq., Monkholme, Burnley gr., Mr. Balmforth. A very distinct and pretty hybrid, with rather narrow green leaves, showing a dark green reticulation. The flower had the characteristic form of the *C. bellatulum* variety. The upper sepal and broad petals were crimson white, laterally marked with purple. Lip yellowish white with a purplish fringe on the face, the whole flower being as a way like appearance.

Cattleya *Parker* (*Howingtonia* × *labiata*), from ROBERT TINSLEY, Esq., Monkholme, Burnley gr., Mr. Balmforth. Flowers of the general appearance of *C. × Mantum*, but rose with a pale purple fringe to the lip.

Cypripedium *M. C. J. Carter* (*Peter*), Charlesworthi *Lithamianum*, from J. GEORGE FOWLER, Esq., Gleadthorpe, South Woodford, or Mr. J. DAVIS. A very fine hybrid, rich in colour and of novel features. Upper sepal large, rolled back at the edge on the lower half, base nearly black, changing gradually upwards to bright rose-purple, which colour extends in fainter markings into the white sepal portion. Petals and lip greenish yellow, marked with purple, the surface glossy.

Cypripedium *S. S. Keeling* (other *Dayanum*), from F. WELLSLEY, Esq., Westfield, near Woking. Leaves very beautiful, whitish, with broad, transverse, dark green markings and reticulation. Upper sepal greenish white, with purple lines of deep purple. Petals marked white, slightly tinged with green, and evenly marked with purple dots. Lip long, and laterally compressed, greenish white, with the upper part of the face of a purple tint. Another form of it is known as *C. Burdighianum*, but in view of the *C. Burdighii*, *Beldii* *var. latifolium*, 1881, xvii, p. 2, the name "Salteri" would be more convenient.

Cypripedium *Abeliana* *insigne* *Charlesworthi*, from Mrs. HAYWOOD, Wood Hill, Reigate gr., Mr. C. J. SALTER. Upper sepal large, white, veined, and tinged

with light purple. Petals and lip rose-tinged. Charlesworthi, but large.

Laelio-Cattleya *L'Esion* (C. BOWLINGHAM & L. C. × *Dominiana* Langleyensis), from Messrs. JAS. VEITCH & SONS, Chelsea.—The best and brightest of the *C. Howingtoniana* crosses. Flowers several on an upright inflorescence; large, and finely-formed, of a bright dark rose purple, with the front of the labellum velvety ruby-red.

Laelia *Dona* *autumnalis* *purpurata*, from Messrs. JAS. VEITCH & SONS, Chelsea.—This singular hybrid approaches singularly closely in habit and in form of flower to *Laelia autumnalis*, but the pseudobulbs are more elongated, and the flowers considerably larger. The three-flowered inflorescence has light rose-like flowers, the curiously-shaped lip being marked with dark rose.

Fruit and Vegetable Committee.

Present: H. Balderson, Esq., Chairman, and Messrs. Jos. Cheal, Henry Estings, Geo. Woodward, J. W. Bates, S. Mortimer, Alex. Dean, W. Pyte, James Smith, F. Q. Lane, Geo. Wythes, J. Willard, G. Norman, Jas. H. Veitch, W. Pompart, A. H. Pearson, W. Wilks (Rev.), E. Beckett, and Geo. Thos. Miles.

A magnificent collection of vegetables was shown by Lord AUBURN, Aldenham House, Elstree gr., Mr. E. Beckett. It extended quite three-parts of the length of the hall, and was representative of all kinds in season, and many varieties of each kind. The celeriacs, Carrots, Onions, Potatoes, Parsnips, Beet, &c., were as perfect as possible, and the green vegetable class was numerous, and of the very best quality. A Gold Medal was deservedly awarded this collection, by no means the first of the kind shown from the same ground.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a fine collection of Apples, and a few Pears, making in all about 100 varieties. These were electively displayed upon a white ground, most of them in dishes, but all along the centre were baskets, and square trays, furnished with excellent examples of Apples and Pears, and each surmounted by a plant of *Asparagus Sprengeri* (Silver Knight) Medal.

Some choice grapes were shown by the Earl of HALDIMON, Elvaston Castle, Derby gr., Mr. J. C. Tallack, including sixteen bunches of black varieties, and twelve of white ones (Silver Knight) Medal.

The largest collection of preserved fruits was one from Messrs. ALLEN & Co., Kingston-on-Thames, who had about 200 varieties, said to weigh several tons. All kinds of sou-tins were included, excepting Strawberries, and in appearance at any rate they were excellent. They are preserved in water only, and are therefore un-sweetened. In this exhibit there were dozens of examples of the same article, and they made an unusual display in the Drill Hall, suggestive of a grower's exhibition at Edmonton, rather than one of the Royal Horticultural Society's Committee's (Silver-gilt Knight) Medal.

Exhibitors of bottled and dried fruits of excellent quality were also shown by Messrs. E. LEE & Co., Maidstone (Brome Medal); THE HORTICULTURAL CO., 11, St. Mark Lane (Silver Banksian Medal); and THE LAY WATKINS & BOSTON, Reading (Silver Banksian Medal).

NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL DINNER.

NOVEMBER 27. The annual dinner of this Society was held at the Holloway Restaurant on Wednesday evening last, when a company of 208 ladies and gentlemen were present.

The Chair was taken by Sir Alfred Knolly Hall, LL.D., D.C.L., M.P., who has recently succeeded the late Sir Edwin Sanderson as President of the Society. This being the first occasion on which the new President has come directly into association with the members since his acceptance of the position, the opportunity was taken to afford him a hearty welcome. Sir Alfred was supported on his right by the Mayor of the Borough of Holloway and on his left by the Mayors of the County of West-Ham and the Borough of Shoreditch.

The Company, which was nearly four times as large as last year, included all the active members of the National Chrysanthemum Society, a considerable number of visitors representative of all the counties and of horticulture generally.

After the toasts of "The King," "The Queen," "Princes and Princesses," "Mr. and Mrs. Knolly Hall," had been honoured with their first and final utterances, the President proposed the toast of the evening, "The National Chrysanthemum Society," and made a concise, humorous speech, pledging the company emphatically. He took that opportunity to publicly thank the members for the honour they had con-

ferred upon him, but feared that he would be little beyond "a figure-head." "A humble Pom-pom among the big Japanese." He would do his homework, for one year, at any rate, and having been chairman of the management of the Hull Botanic Garden, and being associated in various ways with horticulture, these experiences would help him. Sir Albert said he had visited the Society's exhibition and thought the display excellent, the cut blooms, and especially the groups of plants and blooms around the fountain. He thought we might learn a little from the Japanese, who, in arrangement of flowers, always secured the highest decorative effect possible, and had a fondness for the single-flowered Chrysanthemum which we might emulate.

Speaking of the hardy fruits shown at the Aquarium, Sir Albert recommended growers to preserve part of the produce. An American once said of their fruit and nuts, "We eat what we can, and can what we can't." A.M.P. for 14-15-16-17. Sir Albert was glad that the Society originated in North London. The Society had done great service in many ways, including that of judging new varieties, and in classification and nomenclature. He had looked through a list of varieties, and among other names saw that of the Rt. Hon. Jos. Chamberlain, described as a "non-dumper and an easy doer!" The Chrysanthemum was not only a grand flower, but it came to us in the very dullest season of the year. "Why, we open our Chrysanthemum shows in the coast fogs, and can't find our way home afterwards." Sir Albert implored the members to constitute themselves a power for the preservation of the gardens and greenery of London, whether in Piccadilly or elsewhere. London's gardens were as beautiful as any in the world, including the famous ones of Denmark.

The toast of "The President and Vice Presidents, Officers, Auditors, and Committees of the Society," was proposed by the Mayor of Hackney; and the "Royal Aquarium Company and the Donors of Special Prizes," by Mr. T. W. Sanders. Other toasts included those of "Affiliated Societies," "The Visitors" (by the President, who mentioned the names of the mowers present, and Mr. T. Wright of the Royal Horticultural Society, Chiswick, and Mr. Schneider of the Societe Francaise d'Horticulture de Londres); the Ladies, the President, the Press, &c.; and speeches were made by Mr. Thos. Bevan, Chairman of the Executive Committee; Mr. C. Harman Payne, the Mayors of the Boroughs of West Ham and Shoreditch; Mr. Josiah Hiltche, Chairman of the Royal Aquarium Company; Mr. Schneider, Mr. T. W. Wilkinson, &c.

The principal prizes won at the recent show were presented, the Challenge Shield to the Cardiff Chrysanthemum Society (Mr. Geo. W. Drake), the Holmes Memorial Cups to Mr. W. Higgs and Mr. F. S. Vallis, and Gold Medals to Mr. H. J. Jones, Messrs. W. Cutbush & Sons, Mr. R. C. Pilling, Ac.; also Silver Medals to others.

Owing to the generosity of some of the trade firms, and to Mr. Richard Healy, Secretary, and several helpers, the room and tables were abundantly decorated, and the proceedings throughout were enthusiastic.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.

Nov. 29.—A large number of the members gathered at the "Sunflower" Temperance Hotel on Tuesday evening to meet Mr. McLeod, gr. to J. Pierpoint Morgan, Esq., Dover House, Roehampton, who gave a most interesting and practical paper, entitled, "Notes on the Cultivation of Malmaison Carnations." Mr. W. J. Simpson presided, and introduced Mr. McLeod. The lecturer, who is one of the most expert growers of these particular Carnations, dealt thoroughly with his subject, detailing their culture from layers, &c., through their various stages of growth, pollarding, tying, selection of canes, &c. The diseases to which they are subject were noted, and the treatment required by each described. Border and other Carnations also received attention.

The paper was listened to with great interest, and Mr. McLeod's replies to the questions were much appreciated.

The subject for next meeting on December 2 will be "Lilies," by Mr. Wade, Riverside Nursery, Colchester.

SHEFFIELD FLORAL AND HORTICULTURAL.

At last an effort is being made to bring Sheffield into line with other large centres in respect to horticultural exhibitions, and it promises to be successful. Some two years ago a horticultural society was formed, called the "Sharnon and District," and this body at once offered liberal prizes in classes open to all England, with the result that it has already outgrown such a local application. The Committee has therefore decided to enlarge its influence, and under the title of the "Sheffield Floral and Horticultural Society," a successful future may be anticipated. The recent show was a decided success from a horticultural point of view.

Messrs. Frettingham, Sharp, Artindale, Procter, Martin, & Co. were amongst the exhibitors. Mr. Samuel Robert J. P. is the President, the Duke of Norfolk, Earl Wharfedale, Sir A. Wilson, and other prominent men being Vice-Presidents. Mr. Levenson, 32, Neill Road, Sheffield, is Secretary.

The date fixed for the next annual show is August 11, when a Challenge Cup given by the President will be offered for Roses, and it is hoped to arrange a prize list that will attract some good exhibits. Monthly meetings and exhibitions are held, and essays given, which will keep the members in close and frequent association with each other.

YORK CHRYSANTHEMUM.

NOVEMBER 11, 15. Quite the best show yet seen in York was that held in the exhibition building on the above dates. Cut blooms were especially numerous.

The principal class was that for thirty-six blooms, half to be incurred and the remainder Japanese. Seven exhibitors competed, the best stands coming from Mr. W. Mease, gr. to A. TATE, Esq., Leatherhead, Surrey, who staged extremely fine blooms in both sections. Mr. J. T. Leadbetter, gr. to A. WILSON, Esq., Templecroft Hill, was a close 2nd, with particularly neat blooms.

Mr. Mease also won 1st prize for eighteen incurred blooms with massive examples, staged quite in his best form. Mr. Folkard, gr. to Lady MARY WALKER, Sandhutton Hall, York, was a good 2nd.

Twelve incurreds were best staged by Mr. G. Thomas, gr. to the Marquis of Ripon, K.G., Ripon.

Mr. McPherson, gr. to Lord LONDONDERRY, Malton, Wexford, had the best of nine stands of six incurred blooms, staging Lady Isabel, Duchess of Fife, J. Agate, C. H. Curtis, Mr. Perfection, and Banwell Glory. Mr. G. H. Dolson, gr. to R. LAWSON, Esq., Clifton, York, was 2nd.

Mr. McPHERSON staged Topaze Orientale in excellent condition for the prizes for six blooms of any one incurred variety.

For eighteen Japanese blooms, Mr. McPHERSON won 1st prize, gr. to Mr. D. Williams, gr. to the Earl of FEFINGHAM, Danby-cum-Park, Helmsley, was 2nd.

No fewer than seventeen exhibitors entered in a class for twelve Japanese blooms. Mr. R. M. DEWAR, gr. to the Hon. THOMAS DENNIS, Northallerton, won the 1st prize.

With Phœbus in capital condition Mr. McPHERSON won for six blooms of any gold-flowered variety; and for six blooms of any white variety, won with Madame Carnot in the best condition we have seen it this season.

Mr. DEWAR presented blooms of Vivand Morel of great depth and richness of colouring in the class for six blooms of any coloured variety.

Single-flowered varieties were splendidly shown by Mr. McPHERSON, Kirby Moor-side.

Mr. J. SPINK, gr. to J. E. OLIVER, Tollerton, Easingwold, won 1st prize for Anemone-flowered varieties.

For twelve bunches of Chrysanthemums, distinct, not disbudded, three sprays of each, there were nine entries. Messrs. THAKASTON & SONS, Hull, led with the following in splendid condition, Pride of the Market, Source d'Or, White cynthesis, Mille Lacroix, and October Yellow. Mr. G. R. ARKESBOLD, Driffield, 2nd. Plants were capitally shown. Mr. SPINK winning most of the 1st prizes for highly cultivated specimens in their respective classes. Mr. EVERARD, gr. to Mrs. GURCH, Holgate, York, was also a leading winner.

Groups of Chrysanthemums were a good feature. Mr. J. HIFELS, Acomb, York, won with dwarf plants, tastefully arranged. Mr. W. TOWNSEND, gr. to E. R. FABER, Esq., M.P., Harrogate, had the best arranged group of Chrysanthemums and lodge plants.

READING AND DISTRICT GARDENERS'.

NOVEMBER 15.—The fortnightly meeting was held in the Club Room on the above date. The subject for discussion was "Root-pruning." It was introduced by Mr. J. T. POWELL, of Park Place Gardens, Bentley-on-Thames, his remarks being based upon "Why is root-pruning necessary, and what advantage do we obtain by it." The discussion which followed was engaged in by Messrs. SEVE, Woolford, Milton, Townsend, Alexander, Bunting, Cledworth, Chamberlain, Wilson, Bryant, and D. Dove. Three new members were elected.

HIGHGATE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 20.—The seventeenth Annual Dinner of the above Society was held on the above date, the President, C. F. CORNWELL, Esq., J. P., D.L., presiding, supported by Captain C. B. BULLOCK, M.P., several of the Vice-Presidents, and other worthy members, and friends of the Society, including the Treasurer, Mr. J. McKENNAN, Mr. T. BEVAN, Mr. J. H. WILBY, Mr. H. BARNBY the first Secretary of the Society, and Mr. W.

E. BAYNE (the present Secretary). The tables were profusely decorated with Chrysanthemum blooms, some fine specimens coming from Messrs. Gannell & Sons.

DEVON AND EXETER GARDENERS'.

At the recent fortnightly meeting of this Society, the Honorary Treasurer (Mr. W. MACKAY), of the Royal Nurseries, Exeter, read a paper on "Air, Heat, and Water, as applied to Horticulture."

Premising that the subjects named were the A.B.C. of gardening indoors or under glass, he maintained that all gardeners should be conversant with the proper use of the watering-can, the ventilators, and the stoking-irons. The regulation of the air in glass houses was of the utmost importance; it made all the difference in the colour and amount of fruits, and in the early winter this question of air and the prevention of cold draughts was essential to the well-being of Chrysanthemums and other important plants. The average gardener was too much inclined to coddle and treat as tender all plants grown under glass. The use of water many degrees lower than the temperature of the house should be avoided. It was a mistake to put the garden-boy to look after the fires, as that was work which should be done by a responsible man. As to affording water to plants in pots, how often does one see an all-round dose applied to plants in conservatories, whether it was required or not. The application of water overhead required discretion, as many plants were the better for being dipped in a water tank fixed in each glass-house, and a hot-water pipe running through it was a great desideratum. Probably a better one was to have a boiler fixed in the stove-house for the purpose of heating water. The advantages of rain-water were dwelt upon.

CHELMSFORD CHRYSANTHEMUM.

NOVEMBER 13.—This new society held its first show on the above date in the Corn Exchange of the county town. Several cups were awarded for mixed groups, professional and amateur, and some excellent flowers were sent in competition by gardeners and amateurs.

Mr. W. HARRIS, gr. to SIMPSON MARLBOROUGH, Esq., Roomfield, took the 1st prize for a fine group of Chrysanthemum plants. Mr. W. REED, Roman Road, won the Cup for the best group by amateurs.

The best twenty-four cut blooms, distinct, of Japanese Chrysanthemums were those shown by Mr. G. CALVERT, gr. to ED. BARKER, Esq., Lynderswood, Braintree, amongst them being a very superb bloom of Mrs. Combs.

The best twelve Japanese were those shown by Mr. C. J. SIMPSON, Chelmsford, and the best incurred those of Mr. G. CALVERT, a very fine stand of blooms.

The amateurs showed exceedingly well, and for twelve Japanese, and for six blooms, distinct, Mr. J. FAYLOR was 1st in his competition.

Mr. W. HARRIS, in company with Mr. J. TOWNSEND carried off the 1st prizes for a collection, and the best bunches (three of Black Anemone grapes).

Hardy fruits, vegetables, and specimens of the florist's art were largely in evidence, and added considerably to the attractions of the show, which, as a whole, was considered to be a great success.

DULWICH CHRYSANTHEMUM.

NOVEMBER 12, 13.—The eighth annual exhibition was held at the Dulwich Baths. Although there was a slight falling off in the number of entries as compared with last year, the quality had improved, and considering that the whole of the members reside within a radius of three miles of the exhibition-room, it is unmistakably demonstrated what fine results can be obtained within the Metropolitan area, in spite of fog and other drawbacks.

In the open class for twenty-four Japanese blooms in eighteen varieties, Mr. T. DUNNALL, gr. to C. F. YEOMAS, Esq., of Meopham, was 1st; and Mr. E. DOVE, gr. to E. W. WILKES, Esq., of Buckley Hall, was 2nd.

In the gardeners' section, the principal prize-winners were—Mr. A. WINTER, gr. to E. MANNINGHAM, Esq., College Road, Dulwich; W. TAYLOR, gr. to Tewkesbury Lodge, G. HOTTING, R. DUNN, E. REA, and H. G. McLEAM; and Mr. H. FOSTER was the chief amateur, he being 1st in three for a group measuring 50-square feet.

The number of entries was ninety-four, and as an instance of the keen competition, it may be stated that no fewer than eighteen different exhibitors were winners of Chrysanthemum prizes.

Mr. R. ROBERTSON, Nunhead Cemetery, exhibited a fine group of Chrysanthemums and other plants.

A fine collection of fruits and flowers, grown at Tewkesbury Lodge by Mr. W. TAYLOR, excited considerable interest.

The decoration of the platform by Messrs. FRED & SONS, of Norwood Road, was very tastefully performed. Foliage plants with Chrysanthemums, fringed with a fringe of fruit, being the principal display.

The attendance, in spite of doubtful weather, was good; on the second night over 1,000 people visited the show.

VARIORUM.

A CURIOUS INDUSTRY.—The British Vice-Consul at Leghorn, in his report on his district for the past year, mentions a curious industry in which Orris-root plays the chief part. This is the production of beads made from the root, with a fine hole through the centre. The beads are of many sizes, the smallest being about that of a marble. Not many years ago about twenty millions of these were exported each year, but now the export has fallen to four millions. It appears that there was once a medical theory that the best means of curing scrofula and certain diseases of the blood was to keep an open wound in the body of the sufferer, and these Orris-root beads were inserted into the wound for this purpose. It is still possible to buy at Italian medical-instrument makers the special wire-grated bandage prepared for the arm in this process. Orris was probably used in this way because of its tendency to dilate in any liquid substance. The practice undoubtedly still prevails, though medical science has long condemned it. A factory for making these beads has recently been established in Paris, and the greater part of the Leghorn export goes to Lyons, while part goes to Frankfurt. The use of the beads is dying out in Italy, but it is not uncommon to meet with people who have been treated in this way. Another article made from Orris-root is the *dentaranda*, or finger, which is designed to take the place of the old-fashioned infants' coral and assist in teething. The juice, of which a small amount is absorbed in sucking, is said to be an excellent digestive. This is a modern and a growing industry, and apparently reached Italy from Germany. Now half a million of these fingers are sent from Leghorn to Germany and Austria every year. Orris-root grains, coloured in blue, red, yellow, green, and other colours are exported to the same countries, where they are used to throw on fires to give an agreeable odour to saloons and entrance-halls, while in the form of tiny chips the root is chewed, mostly by menservants, to remove the smell of tobacco, garlic, and the like.

FRUIT.—AVERAGE WHOLESALE PRICES.

Apples, home-grown, Wellingtons, per bushel	4 0-6 0	Grapes, Gros Colmar, A, per lb	1 4-2 0
Bleu-Herms, &c., per bushel	5 0-6 0	— B, per lb	1 0-1 0
Cox's, sieve & No. 3, per bushel	7 0-8 0	— Albion, 12 lb	1 0-1 0
various, per barrel	1 0-12 0	— per barrel	1 5-0 17 0
Ribston, per bushel	2 0-2 6 0	Lemons, Murcia	7 0-11 0
— King Pippin, per bushel	2 0-2 6 0	— Lisbon, per case	7 0-11 0
— Large Cox's, per bushel	2 0-2 6 0	Melons, each	0 3-1 0
Bananas, bunch loose, p. doz.	1 0-1 6 0	Oranges, Murcia	1 0-1 0
Chestnuts, per bag	4 0-11 0	— Jaffa, per case	10 0-1 0
Cobnuts, Kentish, per doz.	1 0-1 6 0	— Albion, per case	9 0-10 0
Cranberries, each	1 0-1 6 0	— 1st quality, per case	10 0-1 0
— Nut Scotland, per doz.	1 0-1 6 0	Pears, in crates—	
Crustard, Apples, per dozen	0 1-1 0	— Glou-Morven	5 0-6 0
Grapes, Muscats, per bushel	2 0-2 6 0	— East-Perire	5 0-6 0
— B, per lb	0 6-0 9	— Magnifique	5 0-6 0
— Alvacate, lb.	0 8-10 0	— various, per sieve	3 0-7 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

Artichokes, Globe, per dozen	2 0-3 0	Leeks, 12 bunches	1 0-1 6 0
— Fern-stem, p. sieve	1 0-1 6 0	Lettuces, Cabbage, per dozen	1 0-1 0
Asparagus France, bundle	1 0-1 0	— Mint, new bunch	0 4-1 0
— Paris Green, per bushel	1 0-1 0	Mushrooms, house,	10 0-10 0
— Giant, per bushel	1 0-1 0	— Onions, cases	6 0-6 6
Barbed Cape-corn, bundle	0 4-1 0	— in bags	5 0-5 3
Beans, home, dwl, house, per lb.	0 6-0 6	— picklers, per sieve	3 0-3 0
— Madera, hkt, 1 lb	1 0-1 6 0	Parsley, per doz. bunches	1 0-1 0
Beetroot, purp., per bushel	1 0-1 6 0	— sieve, per sieve	0 6-0 8
Brussels Sprouts, sieve	1 0-1 2 0	Peas, purp., p. cwt.	2 6-3 0
Cabbages, rally, per dozen	0 6-1 0	Potatoes, per ton	4 0-0 0
Cardoons, each	1 0-1 0	— new, per lb.	0 3-0 5
Carrots, per doz. washed, bags	2 0-2 6 0	— Cabage, p. doz.	1 0-1 0
— unwashed, per bag	1 0-1 6 0	— Salad, small, punnets, per doz	1 3-1 6
Cauliflowers, doz. fully	8 0-10 0	— Salted, per doz. bundles	3 6-6 0
Celery, 12 bunches	0 10-12 0	Savoy, per doz. scalloke, rally	1 0-1 0
Cherry, per lb.	0 2-0 2	— Shalloke, rally	21 0-21 0
Cress, per dozen punnets	1 0-1 0	— Shalots, per lb.	0 4-0 6
Cumbers, doz.	2 0-6 0	— Spanish, English, bushel	1 6-2 0
Endive, new	2 0-6 0	— Stacks, lb.	0 4-1 0
— French, doz	1 0-1 0	Tomatoes, Eng. h-sh, dozen	0 6-0 6
Garlic, per lb.	0 6-0 6	— Canary boxes	0 6-0 6
Horse radish, foreign bunch	1 0-1 6 0	— Tunjars, per doz. bunches	1 6-2 0
		— bag	1 6-2 0
		Watercress, per doz. bunches	0 6-0 6

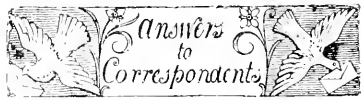
Crop, 38, *id.* to 45. Lynn Grays, 48, *id.* to 55. Bruce, 28, *id.* to 35. Turnips, 98, *id.* to 120. bunches, Swedes, 18, *id.* to 25. per cwt.; Carrots, 60, *id.* to 80. per dozen, and 38, *id.* to 48. per cwt.; Onions, English, 68, *id.* to 80. per cwt.; do, foreign, 58, *id.* to 65, *id.* to 80. Parsley, 60, *id.* to 80. per 12 bunches; Cauliflowers, 15, *id.* to 20. per dozen; Cabbages, 100, *id.* to 150. *id.* to 20. Celery, 80, *id.* to 100. *id.* to 120. *id.* to 150. per peck; Grapes, English, 18, *id.* to 25. per lb.; do, foreign, 60, *id.* to 80. Pines, English, 58, each; Apples, 10, *id.* to 15. per lb.; Pears, 30, *id.* to 40. *id.* to 50. Mushrooms, 25 per lb. *Birkenhead*; Potatoes, 18, *id.* to 25. per bushel, *Cumbers*, 20, *id.* to 30. *id.* to 40. *id.* to 50. *id.* to 60. *id.* to 70. *id.* to 80. *id.* to 90. *id.* to 100. *id.* to 110. *id.* to 120. *id.* to 130. *id.* to 140. *id.* to 150. *id.* to 160. *id.* to 170. *id.* to 180. *id.* to 190. *id.* to 200. *id.* to 210. *id.* to 220. *id.* to 230. *id.* to 240. *id.* to 250. *id.* to 260. *id.* to 270. *id.* to 280. *id.* to 290. *id.* to 300. *id.* to 310. *id.* to 320. *id.* to 330. *id.* to 340. *id.* to 350. *id.* to 360. *id.* to 370. *id.* to 380. *id.* to 390. *id.* to 400. *id.* to 410. *id.* to 420. *id.* to 430. *id.* to 440. *id.* to 450. *id.* to 460. *id.* to 470. *id.* to 480. *id.* to 490. *id.* to 500. *id.* to 510. *id.* to 520. *id.* to 530. *id.* to 540. *id.* to 550. *id.* to 560. *id.* to 570. *id.* to 580. *id.* to 590. *id.* to 600. *id.* to 610. *id.* to 620. *id.* to 630. *id.* to 640. *id.* to 650. *id.* to 660. *id.* to 670. *id.* 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and 20th of 21st, when more than an inch was measured in some localities on two or even three successive days.

The *British sunbath* slightly exceeded the mean for the time of year in most districts. The percentage of the possible duration ranged from 31 in the Channel Islands and 28 in England, S.W., to 18 in Scotland, E., and the Midland Counties, and to 17 in England, N.W.

THE WEATHER IN WEST HERTS.

At the beginning of the week high temperatures prevailed, and especially at night, but since then the weather has been getting colder, and on the coldest night the exposed thermometer showed 15° of frost. The sudden change in temperature is evidenced by the thermometer at 1 foot deep in the ground, which now reads 8° lower than at the beginning of the week. Rain fell on three days, but the amounts deposited were very small. In fact, there has been no measurable quantity of rain-water pass through the bare soil percolation gauge for several days, which is very unusual at this time of the year. The first four days of the week were altogether sunless, but on the remaining three the sun shone on an average for five and a half hours a day, though westerly winds prevailed at the beginning of the week, but the last four days have been very calm. The air was, as a rule, rather dry for the latter half of November. *E. M., Berkhamstead, Nov. 25-26, 1901.*



AMANIUMS, SOIL FOR: *Maidenhair.* Lumpy peat and loam, and sand or broken sandstone one-sixth.

BULBS, &c.: *J. M.* The Lilies should be got in without delay, a slight mulch of litter being put over them to prevent the entry of frost. Iris, Hyacinthus candelicans, and Montbretias may be planted in mild weather. You are two months too late for the planting of these things. If the plants are still in the ground, and there is no reason for disturbing them, the dividing and transplanting would be better deferred till the end of February.

CHRYSANTHEMUM: *A. C.* The plant probably received some check to growth by frost or otherwise. The flowers in the centre are in reality more perfect than the outer ones.

COMPOST FOR POTTING GERANIAS: *Maidenhair.* Either turfy-peat or loam, unless the peat is heavy and compact, when loam is to be preferred. As much silver-sand must be added to give the soil the porosity it requires. In the early stages of the life of a plant, the soil should be sifted through a 1-inch meshed sieve; but when the plant gets into a 5-inch pot, it should be of moderate coarseness, and decayed manure may then be added to the soil in the proportion of one-quarter of the whole.

CORRECTION: The signature to a note concerning the fruiting of *Citrus trifoliata*, p. 376 of our last issue, was unfortunately given as C. B. Leigh Smith, &c., instead of C. B. Lucie Smith, &c.

CUCUMBER LEAVES SCORCHED: *A. H.* The pitch of the roof is such that the sun's rays in the summer impinge at almost a right angle with the glass; and the panes being large, and laps few in consequence, the leaves are very liable to get scorched if the ventilation is not closely watched, and some thin kind of shading employed early in the day.

FUCHSIA CORYMBIFLORA: *A Saucyribier.* The plant should, if planted in a pot, be stood or laid on damp earth or gravel in a greenhouse, so that some little dampness may be transmitted to the soil in the pot. If in a border, no water should be afforded before March, the same holding good if it be grown in a large tub.

HANLEY SHOW: *A Correction.* In our report of the recent flower show at Hanley, our reporter inadvertently omitted to give the name of Mr. L. Pointon, nurseryman, Bidulph, near Congleton, who was 1st in the classes for wreaths and crosses.

INSECTS: Devonian. The two small grubs are the larvae of a Dipterous fly. They had probably been feeding upon decayed vegetable or animal matter. The large white specimen is the larva of the Ghost Moth (*Hepialis humuli*). It feeds chiefly on the roots of Dock and various nettles, and occasionally also herbaceous plants, and are then injurious.

INSECTS ON FELNS: *S. S.* YOUR FELNS are not being injured by insects, but they are attacked by a rust-fungus. Cut off all diseased fronds and burn them. Rest your plants, and when the younger fronds have ripened, try spraying with Bordeaux Mixture. The only insects present were the larvae of the Brown Scale (*Lecanium hemisphaericum*), but these were too few in number to cause injury.

*** * * NAMES OF FRUITS AND OF PLANTS, SPECIAL NOTICE:** We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Not more than six specimens should be sent. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: W. H. O. 1, Jaminette; 2, Millot de Nancy; 3, rotten; 4, Rousselet de Meester; 5, Bourré d'Aréberg; 6, Rondelet.—*H. F. W.* Reimette du Canada.—*G. M.* 1, Morveille d'Ilver; 2, De Maraise; 3, Vicar of Winkfield; 4, Winter Strawberry.—*W. J. Stokes.* 2, Scarlet Nonpareil; 3, Pearson's Plate; 5, Dr. Nelis; 7, Golden Pearmain; 9, Comte d'Égmont.—*J. H.* 1, Gaurain Daval; 2 and 6, Bourré d'Aréberg; 3, not known; 4, Bergamotte Dussart; 5, Belle Ronnennaise.—*Subscribter.* Scarlet Nonpareil.—*J. B.* 1, not recognisable; 2, Belle Plenusienne; 3, Dôlices d'Angers; 4, Anande Double; 5, Gaslin; 6, Deux Sœurs. The box was damaged, some of the fruits crushed, and the labels detached; several are varieties little known in England.—*W. B. J.* 1, Doyenne Delais; 2, Bourré d'Aréberg; 3 and 4, not known; 5, Fondante de Noël; 6, Lion Leclere de Laval. You have not complied with the conditions stipulated; hence the delay. The others cannot be dealt with.—*J. M.* 4, Golden Ducat; 5, Nelson Godlin; 6, Flower of Kent.—*G. H. H.* 1, Downton Pippin; 2, Cooke's Pomona; 3, Nonpareil Russet; 4, Kilkenny Pearmain; 5, Easter Benrre; 6, rotten.

NAMES OF PLANTS: F. C. *Arbutus Unclo*, Strawberry tree.—*R. D. R.* 1, *Thuja gigantea* (Lobbiaj of gardens); 2, *Cupressus Lawsoniana*; 3, a *Cypress* (*Cupressus*) which we cannot name without seeing the cone.—*W. H. P.* *Strelitzia Regine*, a very old and ornamental flowering plant for stove or warm conservatory.—*A. M. T.* 1, *Cyperus laxus*; 2, *Asparagus Sprengeri*, not a Fern, though called so in the market; 3, *Codiaeum* (*Croton*), probably *Weinmannia*; 4, *Strobilanthes Dyeriana*; 5, *Fittouia argyrea*; 6, *Centaurea gymnocarpa*.—*R. R.* (*Oxalis*). Please send again when in flower; we cannot undertake the risk of naming such a scrap.—*E. B.* Nos. 1, 2, and 3 are all *Myrtaceae* plants, but not being in bloom, we cannot give the specific names; 4, *Osmanthus ilicifolius*.—*C. J.* *Selaginella viticulosa*.—*S. McC.*, *Wicklow*, 1, *Leucostoma acuminata*; 2, not recognised from leaf only; 3, *Cornus* (*Beurthania*) *fragifera*; 4, *Juniperus virginiana* var. *elegans*; 5, no flowers, not recognised; 6, *Saxifraga hypnoides*.

PLANTING OF FLOWER-BEDS: *L. B.* The proposed planting with shades of colour in proximity would produce a harmony of colours.

RED CURRANTS FROM A BUSH GROWING IN THE OPEN BORDER: *A. H.* It is indeed very late in the year to find fruits on Currant bushes,

ROMAN HYACINTHS GUMMING: *A Constant Reader.* See reply p. 383 of our last issue. The cases are similar.

ROOTS OF VINES LEFT IN A VINE BORDER PLANTED WITH ROSES: *J. H. H.* There is a risk of the fungus, that will probably seize on the decaying roots of the Vines, spreading to the roots of the Roses. It would be prudent to grub out the larger roots, and those most come-at-able.

COMMUNICATIONS RECEIVED.—Mark Webster—*W. E. G.*—*J. Booth*, Bepin (letter to follow)—*C. M.*—*W. J. C.*—*G. E. R. K.* Although we know the practice is very common, yet we cannot but think it very indecorous. The matter does not concern the general public at all.—*Max L.*, *Baden Baden*—*E. M.*—*Rev. G. F. E.*—*J. V.*, *Orklands, California*—*F. D. East*, *Cottich*, *Morgate, Britany* (next week, thanks for enclosure for Gardeners' Orphan Fund)—*Geo. L.*—*A. Hillman*—*E. Webster*—*S. Baarda*—*J. G.*—*W. E. R.*—*L. W.*—*G. C.* *Herbim*—*B. G.*—*E. G.*—*W. R.*—*R. W.*—*R. P. B.*—*J. O'B.*—*E. M.*—*E. H. J.*—*G. C.*

GARDENING APPOINTMENTS.

MR. JOHN BATES, Foreman for the last six years at Keir Gardens, Dunblane, N.B., as Gardener to JAMES WILSON, Esq., Bantaskin, Falkirk.

MR. HOPKINS, for two years Foreman in the Gardens, Leighton House, Westbury, Wilts, as Gardener and Oud grower to E. SONDLEY, Esq., Wellford House, Arkwright Road, Hampstead.

MR. J. WILLIAMS, for nearly seven years Head Gardener to C. D. HARROD, Esq., at the Manor House, Morebath, Bampton, Devon, has gone with him in the same capacity to Culverwood, Cross-in-Hand, Sussex.

MR. J. PHILCOX, general Foreman of the glass department at Ting Park, as Gardener to C. L. S. SMITH, Esq., Deodar Mount, Bournemouth.

MR. F. J. DABORS, late Head Gardener at Woodlands Park, Leatherhead, as Head Gardener to A. H. ELWES, Esq., Congham House, Norfolk.

MR. H. JOHNS, general Foreman in the Gardens, Healdry Hall, as Head Gardener to W. GOSWELL, Esq., Burton Hall, Neston, near Chester.

MR. JOHN LOVAT, as Head Gardener to Colonel ALLEN, Wingerworth Hall, Chesterfield.

MR. WILLIAM BURKE, for the past eight and-a-half years Head Gardener at Wingerworth Hall, Chesterfield, Derbyshire, as Head Gardener to B. C. DONALDSON HUDSON, Esq., Cheshamside, Market Drayton, Shropshire.

CATALOGUES RECEIVED.

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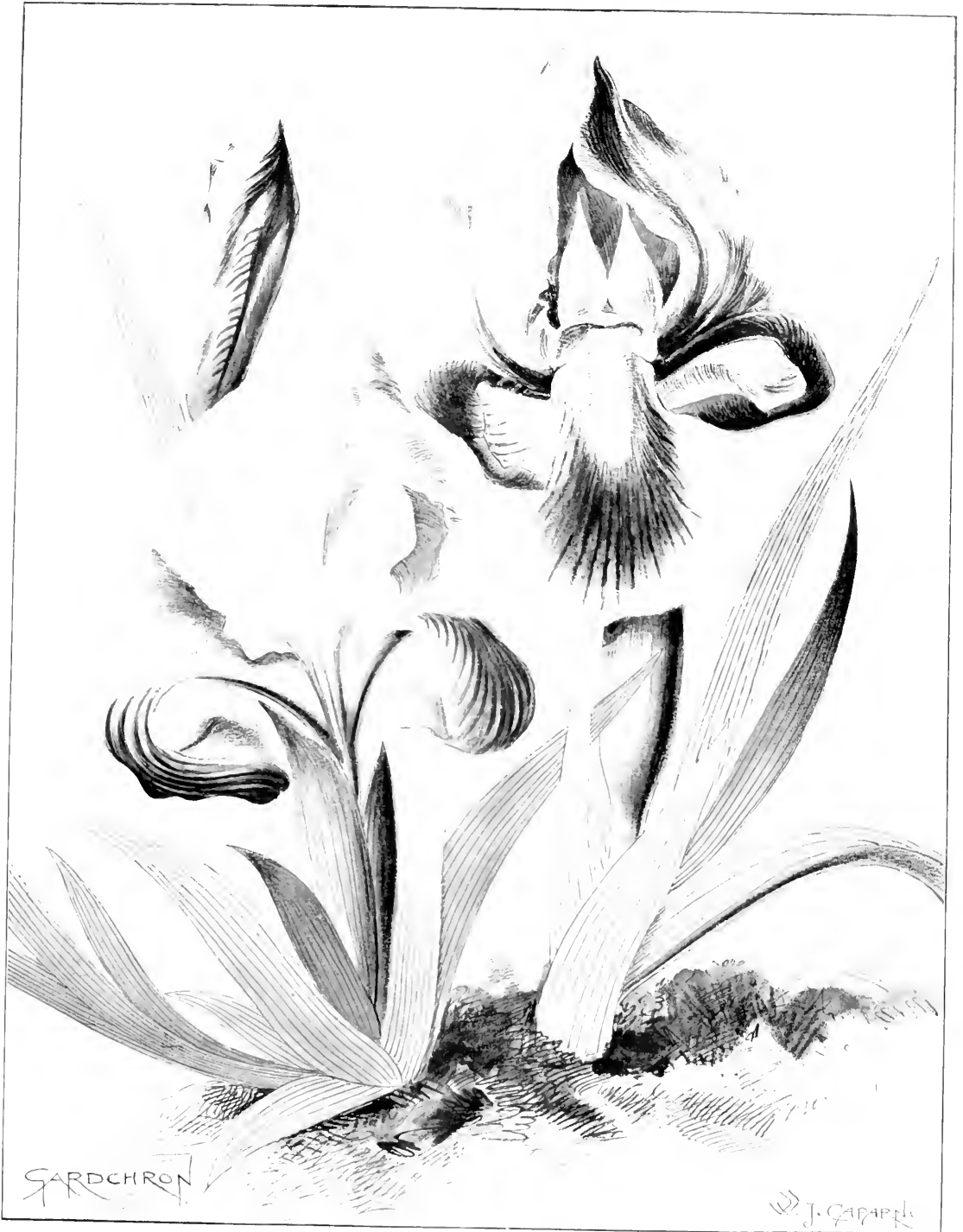
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Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

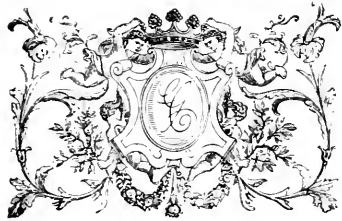
IMPORTANT TO ADVERTISERS. The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

43% TREBLED.

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



NEW HYBRID, EARLY FLOWERING, ALPINE IRIS.



THE

Gardeners' Chronicle

No. 750.—SATURDAY, DEC. 7, 1901.

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WHAT IS "CARNATION"?

WRITERS of late years in treating of the Carnation have accepted the theory that as a name it has no connection with that colour, but has reference solely to the employment of the flowers as woven into garlands for feminine wear. Other writers, as, for instance, Leo Grinden in *The Shakespeare Flora*, and Canon Ellacomb in *Plant Lore of Shakespeare*, also accept the latter as the correct meaning of the word. I have, however, for some time entertained doubts as to whether "Carnation" as an English name has any connection with "coronans" or garlands; and in a Paper read before the Scottish Horticultural Association in 1900, I purposely left the question open. That some continental authorities, on account of the flowers of the large double forms having been commonly used in the construction of garlands, applied to the plant the distinctive designation, "Coronaria" admits of no doubt, and there is evidence to show that flowers in

plenty could be obtained for that purpose in at least Flanders, Holland, parts of France, and in Lombardy. But in England that evidence is wanting, though a single-flowered variety, colloquially called Sops-in-Wine, and perhaps also the small double Clove, Gillyflower, as well as Pinks and Sweet Williams, were so used. As a matter of fact, if the desire to employ Carnations existed, the difficulty of obtaining flowers must have proved an insurmountable obstacle.

Propagation by means of cuttings was practically the only method known, and the plant was thought to be so little hardy as to require wintering in pots under shelter; or else, when planted in the open, boughs, straw, or other suitable material were employed as a covering to protect it from frost and snow. Its general diffusion was consequently seriously affected, and it was not indeed till the introduction of the yellow-flowered section which here seed freely in England that Carnations became at all common.

We unfortunately possess no means of definitely deciding the date when the large-flowered kind, to which alone the name Carnation applies, was introduced, or whence it came. Flanders has been named, and also Italy, and certainly the type of flower which it is possible to locate as the earliest form of Carnation, had much in common with that of Lombardy and of Languedoc. But at the earliest we cannot place the date of its introduction much previous to the middle of the sixteenth century. The very earliest reliable notice of the plant I have been able to discover occurs in a description of Persia, by Arthur Edwards, in 1568 (*Herbarius*, ed. 1590), in which, describing the Cotton-plant, the writer observes, "the tree hath a slender stalk, like unto a briar or to a Carnation gillyflower." In close succession we have Tusser's *Vivandeth Points of Herbs*, ed. 1573 and 1590, where among "Herbs, branches, and flowers for windows and pots" are "Gillyflowers, red, white, and Carnation, set in the spring and at the harvest in pottes, bottles, or tubs, or for summer in beds." Then in 1578 is Lyte's translation of *Doctores*, in which we have "Carnations," "Coronations," and "Coronians," the latter two very obviously connected with the "Vetonicam coronarium," which they follow. Lyte, it may be said in passing, appears from his writing never to have seen a Carnation. He describes neither the plant nor the flower, as we have it elsewhere described in French, in Latin, and in English. Of almost exactly the same date, Spenser has "Coronations and Sops-in-Wine," and besides these, I know of no other instance of the word being used. But of Spenser this further may be said, that he more than once in his fanciful way evolves flower-names that are solely his own; such are "Bellanours," "Starlight," and "Molodwart." A year or two later, Lily refers to "Tilly-flower Carnations, Sops-in-Wine, Sweet Johns."

Though much later as to time, the most important material for effecting a fair decision occurs in Gerarde's *Herbal* (1597), and in Parkinson's *Garden of Pleasant Flowers* (1629). Neither of these authors had any doubt about the matter. Gerarde has been quoted very often, and moreover has been as often confuted and placed in the

wrong, saying "The great Carnation Gillyflower," with its "pleasant Carnation colour whereof it took his name." At present we shall allow the statement to stand on its merits. Parkinson is, however, quite as definite as Gerarde, and is a little more explicit. "The old Carnation," which is called also "The old English" and the "great Harwich Carnation," was a prime favourite, and is referred to more than once for its beauty; but for our purpose it is only necessary to note that it bore a gallant great double flower of a deepe Carnation colour, almost red, spotted with many blush spots and streaks." It is, of course, impossible to say that this carnation-coloured "Carnation" is the same as Gerarde's, or that it was the original; but it must be remembered that Parkinson was sixty-two years of age when his *Paradisus* was published, that he was a contemporary of Gerarde, and when he mentions this variety as being old, it is reasonable to suppose it was known not only at the date of the *Herball*, but long previous to it.

We have, therefore, on the one side the absolutely definite statement of Gerarde that the Carnation was called so because it was of that colour, and that it differed from the Clove or double Gillyflower in being larger in all its parts, and in being less hardy. Parkinson, on his part, bears out the remarks of Gerarde; and at least ten years before Lyte used "Coronation," it is proved to be so well known that a "commercial" traveller employs it to familiarly illustrate what he has to say about a rare plant as yet unknown in England. It thus certainly must have been distributed in gardens previous to 1567, the year Loudon (*Historical Gardening*) thought the persecuted Flemings introduced it when they left Flanders and established themselves in England. And, as already noticed, no writer, not even Lyte, once refers to this particular plant being used in garlands, which is a remarkable omission if it was so employed.

On the other side there is only a poet who never hesitated to alter a word, and occasionally to coin one, to suit his metre or his rhymes; and the translator of a *Herball*, whose knowledge of the plant was, to say the least, only a paper knowledge. It is surely more consonant with reason to accept the explicit statement of a man who, not unlikely, had been acquainted with the earliest Carnation, borne out as that statement is by other writers both earlier and later in point of time, than to accept on such meagre material, unsupported by evidence, a quite un-English designation, *B.*

NEW OR NOTEWORTHY PLANTS.

STAPELIA INCOMPARABILIS, N. E. Br.

THIS is, so far as I am aware, a very rare plant in cultivation, and of unknown origin, but is probably a native of South Africa. I first saw the plant in 1875, and have had flowers sent to me on a few subsequent occasions; but since 1881, when it was in cultivation at Kew, I have not seen it. I therefore publish my description of the plant, made many years ago, in order to draw attention to it, if it should still exist in the collection of any lover of this group. There is no species known to me with which it can be compared,

but it may be recognised by its cup-shaped purple-red or purple corolla, with reflexed lobes, ciliate, with vibratile, clavate hairs. A very handsome and distinct flower, unlike any other.

Stems 3 to 6 ins. high, 4 to 6 lin. thick, branching at the base, 4-angled, minutely puberulous when viewed through a lens; angles with stout horizontal teeth, 1 to 1½ lin. long, tipped with slightly ascending, subulate rudimentary leaves, 1 to 1½ lin. long, which soon wither. Cymes sessile or sub-sessile near the base of the young shoots, 3 to 1 flowered; pedicels ½ to 1 in. long, glabrous to the eye, but very minutely pubescent as seen through a lens; sepals 3 to 5 lin. long, 1 lin. broad, lanceolate, acuminate, glabrous, ciliate with white hairs; corolla 3 to 3½ inches in diam.; the disk part broadly cup-shaped, 1 to 1½ inches in diam., and about ½ in. deep, suddenly contracted at the bottom into a very short subpentagonal tube, enclosing the corona and organs of fructification; lobes about 1½ in. long, ovate, acuminate, reflexed or very spreading, ciliate, with long, clavate, vibratile, dark purple hairs, sometimes with some white ones intermingled with them; outside of the corolla glabrous; inside rugose, pubescent with short, dark purple hairs in the very short tube, otherwise glabrous, entirely purple-red or purple, or sometimes marked on the rugosities with narrow, irregular, transverse yellowish or whitish lines. Outer coronal-lobes 2 lin. long, ½ lin. broad, linear, nearly parallel-sided, subtruncate, emarginate, bifid or rounded with a slightly projecting tooth at the apex, dull purple or purple-red, paler along the margins. Inner coronal-lobes 2-horned; outer horn free to the base, flat, 1½ lin. long, ½ lin. broad at the base, whence it gradually tapers to an acute apex; entire, purple-brown, sometimes speckled with paler at the apex; inner horn 4 lin. long, subulate, clavate and acute at the apex, erect, slightly recurved at the tip, purple-brown, sparsely speckled with paler at the apex. *N. E. Brown.*

GARDEN PALMS.

(Continued from p. 351.)

CHAMEROPS COCHINCHINENSIS, Hort.—This name has puzzled me very much. *Chamerops* is a European and Northern African genus; of course, a *C. cochinchinensis* is a misnomer. When I first visited the Riviera and for the first time admired large Palms in the open air (a mighty *Washingtonia filifera*, with a trunk 4 m. high, and 70 cm. in diameter; large *Cocos*, *Livistona* and others), I was struck by a label, *Rhapis cochinchinensis*. At a glance I saw that it was not a *Rhapis*, but a *Trachycarpus*. Now I think the history of this plant may give a hint as to what *Chamerops cochinchinensis* is. The seeds of this plant were received as *Chamerops cochinchinensis*. The director of the garden well knew that there does not exist a *Chamerops* in Cochinchina; he thought there might be a *Rhapis*, but as he had never seen seeds of *Rhapis* (they are very rare), he could not know that he was mistaken. So he altered the name into *Rhapis cochinchinensis*. The man died, but the plant lived, and the label was renewed every year. There is, in the same garden, a very fine specimen, correctly labelled, of *Rhapis flabelliformis*, and I cannot understand how the wrong name *Rhapis cochinchinensis* became preserved. So now the identity of *Chamerops cochinchinensis* is cleared up, at least generally, whether it is *exelsa* or *Fortunei*, I cannot say with certainty, but I suppose it to be the former.

In the same garden I found a plant under the name *Latania arborea*, that was really *Livistona chinensis*.

In a catalogue of Riviera Palms, as well as in a description of the Palms of the Riviera, I found the name *Corypha Gebanga*. I hesitated to believe that this was right, as *Corypha Gebanga* is a plant which is accustomed to a very warm, moist atmosphere. So I was anxious to see the *Corypha Gebanga* of the Riviera. Had I known that such plants as *Wallichia porphyrocarpa* and *Livistona Boegendorpii*, of both of which I had seen strong plants on the Riviera in the open air, passed through the last winter with -6.5 R. without any protection, my doubts would have been less strong concerning the *Corypha Gebanga*. But when I saw the plant for the first time (and I have since seen more specimens of it), I knew that my doubts were correct. It is not a *Corypha* at all that is cultivated under this name on the Riviera, but a true *Livistona*, though I could not at first name the species. It is a very characteristic one, the young folded leaf is brownish, a characteristic so striking that it cannot be overlooked. I wondered for weeks what species it could be. When I went in October to Herrenhausen, to congratulate my friend Wendland on his seventy-sixth birthday, I asked him whether he could tell me what this puzzling *Livistona* might be, and described the plant to him. "Is it not *Livistona oliviformis*?" he asked me. And, indeed, it can be no other species.

Another Palm, sailing at the Riviera under a false flag, is that named *Copernicia cerifera*. I have been looking for this Palm for a long time. Many letters were written, asking for ripe seeds of it, but up to date without any success. I have never seen a living plant of this species, unless at Kew, but I am uncertain about it there. So when I found it mentioned in the above-mentioned description of the Palms of the Riviera, and that there was a very fine specimen of it at Mentone, I was very anxious to see this plant. Alas, it was a rare Palm indeed, but it was not a *Copernicia* at all, but another *Livistona*, viz., *Livistona inermis*. I must confess I have never seen a finer specimen of this species than that of Mr. Kennedy at Mentone, and I must congratulate the owner that he has in his rich collection of Palms such a superb specimen of this fine species. *Dr. Udo Dummer, Gross Lichterfelde, Berlin.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUMS, &c., FROM MORPETH.

HYBRIDS, many of them home-raised, are frequently being sent to us from even remote parts of the country. An interesting lot is sent by Edward Hopper, Esq., Riverside, Morpeth, who has secured the services of Mr. Alfred Wright, who managed so successfully the Orchids of the late Sydney Courtauld, at Braintree. Among them is a very dark-coloured form of *C. × Eismannianum*, showing extraordinary vigour. The spike bears two flowers, the lower one having the bract developed into a leaf. Others are a good *C. × superciliale*, *C. Arthurianum*, and a curious hybrid of probably *C. tonsum*. Together with these were flowers of the dark-coloured *Laelia lona* (*tenebrosa* Dayana), and a very brightly coloured selection of varieties of *Cattleya labiata*, that called "Riverside variety" being good in every respect, and especially in the large, intensely dark purplish-crimson labellum. The whole of the flowers have that well finished appearance which always denotes good cultivation.

CYPRIPEDIUM CHARLESWORTH.

This comparatively recent introduction proves to be one of the prettiest and most useful of cool-house *Cypripediums*, and at the present time it is one of the most effective in many gardens. It was fortunately imported in large quantities, and is consequently distributed very widely, and well represented in most gardens, even where Orchids are not considered a special feature. A fine example of the flower came from Mr. E. Hopper's garden. The whole flower is large and well coloured, but the upper sepal is extraordinarily developed and brightly coloured. It measures rather over 3 inches across, and is of a bright purplish-rose at the base, changing to rosy-lilac towards the upper portion where it is mottled with white. The darker colour at the base extends in branched lines into the upper part.

Another very handsome variety, not so large, with the dorsal sepal similarly coloured but with a darker band up the centre, is sent by Dr. S. Herbert Perry, of Spalding.

TREES AND SHRUBS.

BERBERIS THUNBERGI.

THERE are few dwarf shrubs more effective and brilliant in their autumn colouring than this *Berberis*, and apart from this, the plant is compact in habit and useful for grouping by itself or on the margins of shrubberies where autumn effect is not specially aimed at. It grows from 2 feet to 3 feet high, and may be arranged about 5 feet apart in a group, when in time the plants will get near enough together to form a mass. For making a fine display during autumn, irregular groups of from twenty to fifty plants are desirable, or as many more as may be preferred, and the position should be one fully exposed to the sun, such as a southern slope in the pleasure-grounds or in the wild garden. To insure a good start, it is better to dig-in the sods between the plants, if on the lawn, and keep the surface hoed occasionally for one season. Some *Daffodils* or other hardy bulbs may be put in for flowering in the spring, when the *Berberis* itself is bare. Being deciduous is sometimes considered a drawback to a shrub for planting extensively, yet this must be a condition for getting autumn colouring from the ripening foliage, and few will regret planting a hundred or more of *B. Thunbergi* where the grounds are extensive and there are favourable positions for them. It is a native of Japan, and there is not much difficulty now in getting plants. *J. G.*

THE NATURALISATION OF FOREIGN TREES.

THE BLACK WALNUT.—The introduction of American forest trees (from the north-east) which took place some centuries ago, that is, of Black Walnut, Hickories, *Robinia* (*Acacia*), *Tulip-tree*, &c., has proved that these trees grow just as well with us as in their native land. Still, it was in vain that clever, far-sighted men like Duhamel, Michaux, Du Roi, Wangenheim, and many others, pointed out in classical works the great wisdom, from an economic point of view, of introducing these species on a large scale into our forests. In Great Britain their introduction was still more difficult, as there was no Government Forest Department as in most continental countries, owing to the absence of State forests in England. But on the continent also the opposition of the officials to the in-

roduction of these valuable species into the forests proved to be stronger than the sound theories of the other party. Not even a fair trial on a small scale was granted; so this struggle lasted for centuries, and all these valuable species were condemned as being only fit for planting in parks and pleasure-grounds, and insisted to become forest trees.

For many years I inspected fully-grown specimens all over Germany and England. I went frequently to England and to Scotland, and saw the astounding development of the Douglas Fir and others at Seone Palace, Murthly Castle, and at a good many other places. I published a book on the Douglas Fir about twenty-five years ago, and this little publication had the good fortune to attract the attention of our great Chancellor, Prince Bismarck. He at once took up my ideas, after having studied the question from the Report I had prepared on this occasion. I pointed out the advisability not only of trying the American Conifers, introduced after 1825, from the west, but in the first place of settling officially the long disputed question as to which were the most valuable deciduous trees, Black Walnut, Tulip-tree, &c., introduced some hundred years previously. From this time, after his retirement to the end of his life, I had the active sympathy of the Prince; for almost twenty years he was a staunch supporter of my ideas. With his customary energy, he induced the Minister of Forests to make trials all over the kingdom after a certain definite method; and so some £10,000 were spent during a few years in procuring good seeds from America and Japan.

Now after twenty years have elapsed, we have the result published by Professor Dr. Schwappach, who is the head of these trials in Prussia at the Forest Academy at Eberswalde; his facts are collected from, and based upon, more than 100 reports of head foresters, and prove that nineteen species, under favourable conditions, succeed in our climate, and are fit for forests as they give a valuable wood. Among these nineteen species we find the Black Walnut, figured in your columns lately.

The trees at Fulham Palace I know very well, having visited these gardens several times in my life to enjoy the sight of these splendid trees. According to the *Hortus Kewensis*, *Juglans nigra* was introduced in 1663, and Bishop Compton planted, as far as I know, the Black Walnut in 1688, or 213 years ago!

Mr. Bean concludes his remarks thus: "The Black Walnut has been recommended for planting for profit as a timber-tree in this country, but I have not heard that successful results have been obtained."

In the number dated November 16, Mr. Leach, Albany Park Gardens, records such enormous dimensions of the Black Walnut that my information about this tree has been enriched considerably. He says at the end of his article: "In conclusion, I wonder this tree has not been used for planting in company with Planes in streets and thoroughfares."

Now, Mr. Leach must allow me to ask him, after felling this giant to make room for the Lebanon Cedar, what did he do with the enormous quantity of wood—65 feet without a branch? This tree having had a total height of 100 feet, another 35 feet with strong branches must have given a nice lot of Black Walnut wood.

My father planted in 1825, at Flottbeck, near Hamburg, all these exotics in a newly-formed arboretum; fifty years later, I was obliged to cut them down, to have scientific experiments made as to the quality of the wood. Of all these trees, then only about fifty years old, Plane, Tulip-tree, Douglas Fir,

&c., but especially of Black Walnut, I had the finest wainscots made. One room was wainscoted with *Juglans cinerea*, the Butter-Nut; the polish was still finer than that of nigra, with a splendid glossy lue. These fine woods came from trees only fifty years old, and I must say that very likely such a piece of wood from an introduced and naturalised species, representing such value, has never been felled in Europe.

I will now give the figures respecting the different foreign woods imported to Hamburg, details extracted from the statistics of the Chamber of Commerce for the five years, 1893 to 1897. The importation of all the tropical woods (Mahogany, Cedar, Jacaranda, &c.) amounted in this period to \$22,021, and in the meantime that of the Black Walnut alone to £1,124,067; so, £212,046 more than all the others together. The value of Black Walnut wood is put down in these official lists at an average of about £10 per cubic metre. After showing the figures of the Albany tree to foresters, they estimate that it must have yielded at least 20 cubic metres, so the tree must have had a value of £200.

Now perhaps Mr. Leach will be so good as to tell us something more about the wood; it is a most interesting matter, and we should be very pleased to get more news about this most remarkable tree. *John Booth, Corresponding Member of R.H.S., Gross-Lichterfelde, near Berlin.*

COLONIAL NOTES.

FRUIT-GROWING IN QUEENSLAND.

Bananas.—The area under Bananas was greater in the past than in the previous year by 413 acres, but the yield has been considerably less. The area under this crop in 1900 was 6,215 acres, as against 5,802 acres in 1899, the district showing the principal increase being Cairns, with 652 acres greater area in 1900 than in the previous year. Singularly, this district showed a decrease for 1899 as compared with 1898, so that some additional land must have been put under this crop during 1900, probably new land, just cleared, which always yields the best returns under Bananas. The total production in 1900 was 2,321,408 bunches.

Pine-apples.—The area of ground under Pine-apples was less for 1900 than for 1899, the areas being 939 acres, yielding 121,835 dozen in 1900, against 991 acres, yielding 101,692 dozen in 1899; so that whilst there was a reduction of 35 acres, there was an increase in the yield of 23,143 dozen. The total production in 1900 was 403,710 dozen. In addition to yielding in large quantities a product that under careful cultivation is one of the most delicious of all fruits, from the leaf of this plant, either in its wild or its cultivated state, a fibre may be obtained surpassing Flax in strength, fineness, and glossy appearance. Their relative strengths were found to be as 26 is to 35. It is also found to possess special qualities for rope-making, it being a good damp resistant; and from the fineness of its fibre, it is considered by some experts that it would offer special advantages for mixing with cotton or wool. As the plant grows so freely in Southern Queensland, it is possible that a little investigation might lead to its further utilisation in this direction.

Onions.—A satisfactory increase is returned under this heading for the past as compared with the previous year, both in area and yield. For 1900 there were returned 2882 acres, yielding 2,011,068 dozen, against 2321 acres,

yielding 1,420,839 dozen, in 1899, being an increase of 558 acres and 620,229 dozen in yield. The area of productive trees was 2015 acres, and of non-productive 837 acres. Total production in 1900 was 2,011,068 dozen.

Mangos.—A good, steady increase was shown in the area under this fruit for the past as compared with the previous year, the area for 1899 being 215 acres, returning 191,671 dozen, which increased in 1900 to 111 acres, yielding 277,441 dozen. Of this area, 319 acres were productive, whilst 62 acres were non-productive, not having yet come into bearing. All the northern portion of the State on the seaboard seems to be well adapted to the growth of this fruit, which can be produced there in any required quantity; but the drawback seems to be the difficulty of finding a suitable market. It is quite true that much of the fruit grown and sent to market is from trees bearing inferior Mangos, and no one would readily acquire a taste for this fruit if only the fibrous varieties, with strong, unpleasant flavour, were presented for their use. But there are Mangos of most delicious flavour, and free from fibre, which can be grown as easily as the worthless kinds; and if these are properly gathered and packed, they should be saleable in any market. The total production in 1900 was 277,441 dozen.

FRUIT AND FLOWERS IN QUEENSLAND.

Half an hour's stroll in the grounds of the Acclimatisation Society at Brisbane will secure an inspection, amongst others, of the following:—Strawberries, imported from England, France, the United States, and New Zealand, growing alongside Pine-apples which have come from Florida, the West Indies, and Singapore; also Bowen Park Seedling plants of both Pines and Strawberries, the whole in full fruit. English and Himalayan Blackberries, just through with their spring and early summer crop, standing within a stone's cast of Mangos from Bombay and the Mauritius, and a Custard-Apple from Brazil, all promising a satisfactory harvest for the coming mid and late summer.

Just on the margin of a large patch of tall Sugar-canes, consisting mostly of Bowen Park, West Indian, and Demerara selected seedlings, can be seen Rock and Musk Melons, maturing on the same strip of land that ripened Tomatos during the recent mild winter, and which will probably be called upon again directly to carry an early winter crop of Cauliflowers. The filling of one section of the grounds is suggestive of an extensive itinerary, owing to flourishing examples of the following coming under review:—

Rhubarb from Siberia, English Apples and French Lavender, Spanish Chestnuts and Italian Olives, a Mulberry from Constantinople, Snyrna Figs, Persian and Soudanese Date Palms, Henna from Egypt, Coffee and Castor-oil from Arabia, a hedge of Kei Apples from Cape Colony, Jackfruit and Tamarinds, Teak and the Toddy Palm from India, Cinamon from Ceylon, and many East Indian representatives, such as Ginger, Croton oil, Pachouli, nut-vonica, and Rice; *Aronga saccharifera* from the Philippines, Litchi-Litchi and Tea from China, Central Asian Buckwheat and Japanese Cus-cuts and Persimmons, Californian Redwood, Rondelotia and Monstera from Mexico, Limes from Tahiti, Taro from the South Seas, Central Australian Saltbush, Flax from New Zealand, Mate from Paraguay, and Green-heart from British Guiana, with many plants from intervening portions of South America, including Coca, Tobacco, Guava, and Tapioca; Granadillas, Logwood, Guttapercha, and Mahogany from tropical and

Central America, Allspice and Alligator Pears from the West Indies, and Pecan Nuts from Texas.

A flower border in the same grounds further emphasises the lesson, for in it in their season can be seen, in splendid flower, Daisies and Hibiscus, Ranunculus and Frangipani, Snowflakes and Ipomea Horsfalliae, Jonquils and Gardenias, Larkspur and Poinsettias, Pelargoniums, Fuchsias, Hydrangeas, Wallflowers, Sweet Peas, Dahlias, Freesias, Chrysanthemums, Hollyhocks, and English Ivy, along with Azaleas, various Orchids, Allamanda, Gelsemium, and the Rangoon Creeper.

Without entering the shelters and glass-houses—wherein it is usual to protect plants designed for the tropical North, such as Cocoa and Vanilla—and passing the packing-shed, through which may be seen during the winter time such plants as Cherries and other stone fruits, destined for the elevated inland portions of Southern Queensland, should further evidence be required to carry conviction, one minute's longer stroll over a sward composed mainly of tropical Buffalo-grass and English Clover will take the visitor to a pond, within which, flanked on one side by Burmese Bamboos, and on the other by a Weeping Willow, can be seen growing from seeds ripened in the open air, and soon now to be in full bloom together, the British white Water-Lily, culled originally in a tiny Welsh streamlet, and the giant Brazilian Victoria Regia, from the mighty Amazon. *The London Correspondent of the "North Queensland Herald,"* 3, Temple Chambers, E.C.

OUT-DOOR OPUNTIAS.

The accompanying illustrations are from photographs taken in the Cambridge Botanic Garden. Three distinct species are shown, and in each case there is perhaps no finer example of out-door culture in Britain. One of the illustrations (fig. 122) includes the true *O. monacantha*, and a very fine and distinct species known for the present as *O. glauca*. It has not yet flowered, but in its growth it surpasses all others, whether in a plant-house or out-of-doors. The other illustration (see fig. 123) represents a single fine mass of the kind usually known as *O. Engelmanni*.

O. monacantha may here be distinguished by its narrow joints; the specimen is composed of about three dozen, and some of the larger measure about 14 inches by 1½ inches. It is always a very distinct plant, easily recognised by its dark green colour and its strong isolated spines, on account of which, no doubt, the name was given. This specimen has grown up and flowered in its present position, and has sustained the cold of the last five winters without the slightest injury. It has had the assistance of glass overhead to keep off wet, and also that of a mat, hung in front when weather has been coldest. The house behind it is quite cool, and no warmth is obtained from it. The flowers are orange-yellow.

O. glauca (fig. 123) is a magnificent plant, but is the most tender of all grown out-of-doors. With some injury, and under the conditions related above, it has survived the last four or five winters to good purpose, making strong growth every year. The specimen illustrated is about 5 ft. high, and has about eighteen joints, some of which are about 16 inches long by 1½ wide. It is remarkably glaucous, and so attractive is this whiteness that some visitors cannot abstain from tracing lines with the finger. It has not yet flowered, and the name is therefore doubtful. It was raised from seed, and the same plant has been raised

from seed under the names of *O. robusta* and *O. albicans*. The mass of *O. Engelmanni* (fig. 123), which has an illustration to itself, is 10 feet long, 5 feet from front to back, and about 1 foot high. It is absolutely hardy, and has grown out-of-doors for a number of years. It is very free in growth, but flowers very sparsely. The larger joints are about 1 foot long, by 6 or 7 inches wide, and, as will be seen, the plant is distinctly decumbent. When the plant flowered first it was referred to *O. pseudo-tuna*, said to be figured in *Bot. Mag.*, t. 3911, under the wrong name of *O. monacantha*. Certainly there was a close resemblance to this figure; but *O. pseudo-tuna* belongs to a section with yellow spines, and Labouret describes it as erect, and

open bed in a sheltered position, and since it is very hardy, I expect it will survive the winter without protection of any kind.

For an article on out-door Cacti, which have been a feature at Cambridge for many years, see the *Cactus Journal*, November, 1899, p. 149. *R. Irwin Lynch.*

THE ROSARY.

THE ROSE GARDEN: PREPARING FOR THE WINTER.

(Continued from p. 387.)

It is impossible in our uncertain climate to rely upon the occurrence of a mild winter. I remember at one time doing so, and all went

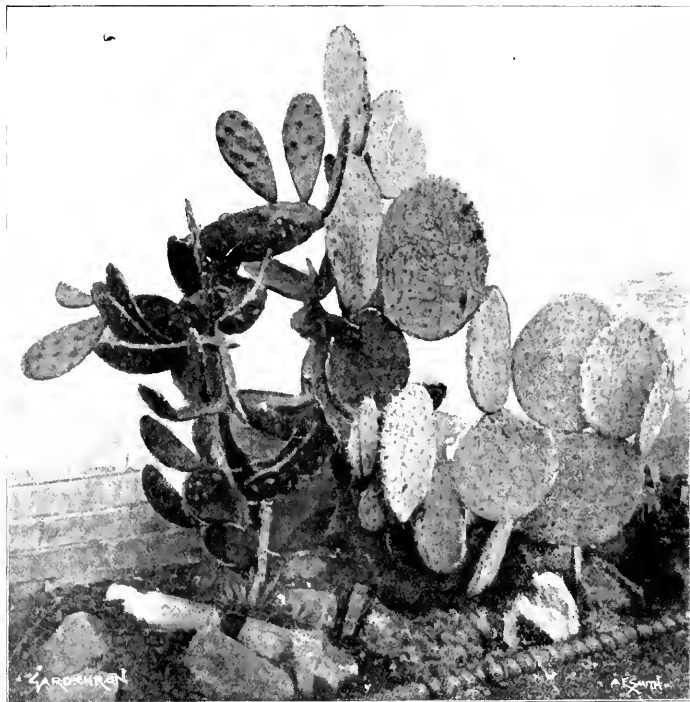


FIG. 122.—*OPUNTIA MONACANTHA*, AND *GLAUCA* ON THE RIGHT.

(Height 5 feet; joints 14 inches wide. Growing in the Cambridge Botanic Garden.)

of bright green colour, while this plant has white spines, and is strongly glaucous, besides being decumbent.

The above Opuntias are chiefly of value on account of their stem growth, and it is the case with others; but one I have is very effective when in flower, and even in fruit. This is *O. bicolor*, of which I have a mass nearly, if not quite, 7 feet long, 3 feet from front to back, and 2 feet 6 inches high. The flowers are orange-yellow, and the fruits red. It is perfectly hardy. All of these Opuntias are covered overhead in winter with glass, but the hardiest are scarcely in need of it. They require to be planted in full sunshine, and against a south wall, to do their best, *O. arborescens* has this year grown well in an

well until Christmas Eve, when a severe frost caught us all napping, and a large number of our bushes were killed to the ground by it; and there is less reason now than ever to omit the precautions that are necessary to safeguard our plants, for the culture of Rose-standards is now pretty much abandoned, except in peculiar situations, although I believe that those who grow Tea Roses for exhibition obtain finer blooms from half-standards than they do from dwarfs. But by far the greater number of Rose-growers grow them as budded plants on the Manetti, scedling Briar, or Briar cutting; and if these have been budded low down as they ought to have been they will be more easily protected. The plants ought now to be all gone over, and the

weakly shoots removed. All very vigorous shoots ought to be tied to stakes and slightly shortened, so as to prevent them from being blown about by such winds as we have every winter; for if a Rose-plant is left wobbling about in the wind it makes a cavity in which water is sure to settle, and if frost comes it will most surely injure it not kill the plant. It is a good plan then to draw up some portion of the earth from the surface of the beds round the collar of the plant; it need not be a large quantity, but sufficient to cover the point of junction where the plant is budded. After this is done, the coating of well rotted hot-bed manure which is to afford the nourishment to the plant for the succeeding season may be laid down all over the beds

that Tea Roses did not require much pruning, but latterly that notion has, I think, been abandoned, and in my own garden I use the pruning-knife as much for the one as the other. Should, however, growers wish to preserve the wood of their Teas, fronds of bracken placed amongst them will effectually do this, and they are not so likely to be blown about as the other materials to which I have alluded.

I have said nothing about the protection of Roses on walls and fences; these may be protected with mats or frigi-domo, or any such material, but whatever the protecting material used, it should be easily removable, for if the plants are covered up too long, they will start into premature growth, and so

IMPORTED ORCHIDS.

REMOVAL OF LEADING GROWTHS.—Leaving the question of the desirability of removing the back-bulbs of Orchids, I turn to another subject which has not yet been dealt with, which I consider is a matter of considerable importance to cultivators of imported Orchids; and especially the epiphytal, pseudo-bulbous species, such as Cattleyas and Lælias, viz., the systematic removal of the leading growths of imported subjects as soon as there are three on each leading point, which are home-made. There is no doubt that considerable numbers of Cattleyas, &c., have died within a few years of their having been imported, and that, too, in the hands of

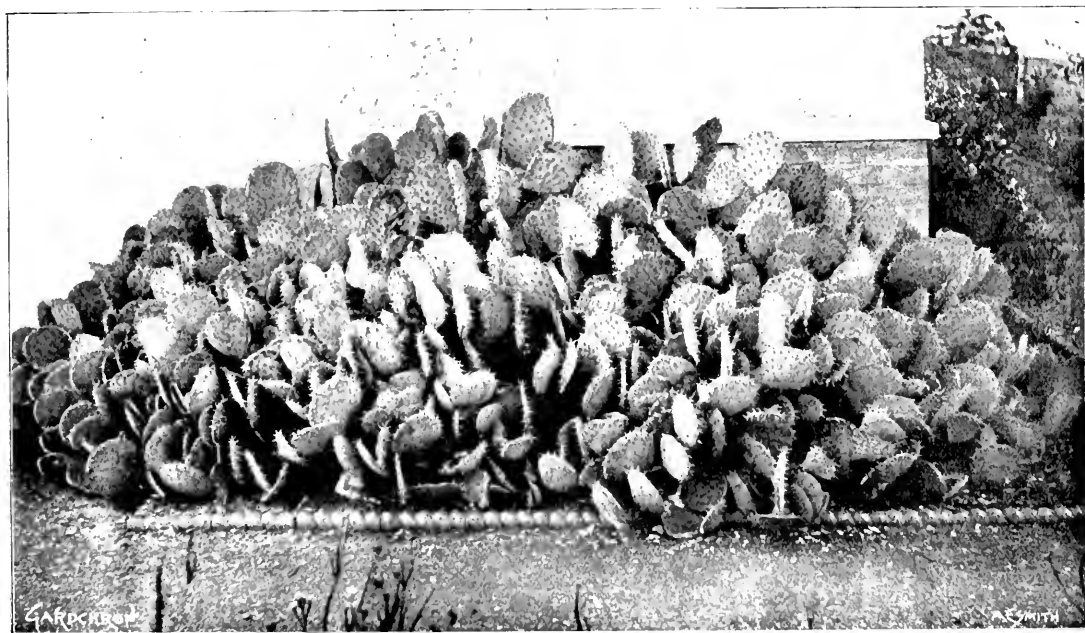


FIG. 123.—*OPUNTIA ENGELMANNI*, IN THE CAMBRIDGE BOTANIC GARDEN.

(Width 11 feet; from back to front 4 feet; height nearly 2 feet. See p. 198.)

to the depth of 6 or 8 inches. Of course, if this be very moist it is most likely to catch the frost; but that does not matter much if the lower part of the stem of the plant is well guarded. The question as to whether Tea Roses are more hardy than hybrid perennials is often mooted, and as often divergent opinions are expressed; on the whole I am inclined to think they are less hardy. There are some Teas, such as Marie Van Houitte and Madame Lambert, which are quite as hardy as any perennials; but then, again, there are some which are unquestionably more delicate, and various suggestions have been made as to protecting them. Dried leaves, straw, &c., have been suggested as covering materials for the beds. I have tried both of them, but never again; it might be all very well if we had no wind, but the first gale sent the material all over the garden. In those days it was thought

become a more ready prey to frost. I have been astonished sometimes to see how Tea Roses even planted against a wall facing east have withstood frost; of course, there are very severe winters which try anything and everything. My grand plant of Reve d'Or, which for years had been a perfect picture, was so crippled in one of those severe winters we had twenty years ago, I thought it was done for; and I was about to dig it up, but it shot out again, and now nearly covers the area it did before. I must add that it had no protection whatever, and so, like Gloire de Dijon, it stands a good deal of frost. There is a strong feeling abroad that we are likely to have a severe winter; there are probably no real grounds for this, but still it exists. Let all Rose-growers be prepared, then, to give their favourites a double share of their care and attention. *Wild Rose.*

experienced growers. Recently, in going over the collection of a leading amateur, he took occasion to remark, especially with reference to Cattleya Mossiae, that of the numbers that he had from time to time purchased, the greater part had "slipped through his fingers" somehow.

I think if we could trace the causes of such failures we should find that in nearly every case the decline had taken place primarily in the old imported pseudo-bulbs, and communicated to the leading growths, with the result that all ultimately died together. Such decay is not peculiar to Orchids alone, for the growers of herbaceous perennial Carnations and other hardy plants often experience it. It is a common thing to see masses of Pinks, Pyrethrums, Delphiniums, &c., which grow from a centre and continually extend the active vegetative growths in an increasing

radius, and which have been left undisturbed for many years, after a time degenerate in the size and beauty of their flowers, and then die, or nearly so, in a seemingly unaccountable manner. Examination shows that the great mass of the old and useless centre has at last paid the debt of nature, and in departing had either taken with it or seriously imperilled the more active portion of the plant. If, when the deterioration in the growths and quality of the flowers was first noted, the mass had been divided into four with a spade, and each portion planted separately, the outer active portion of each segment would have become a fresh centre, and the rejuvenated specimens commenced a new era.

That something like this takes place with Orchids is plainly shown by the hold we have on famous varieties, whose value prompts the holders to propagate them to the utmost. Many years ago, when importations were few and far between, there appeared a plant of *Cattleya Mossiae* alba, and at Sion House there flowered C. M. "Sion House variety." This latter was the special ambition of all Orchid-growers, and in a few years all the leading collections had one or more plants of it, and it was always obtainable at a moderate rate. It was a great favourite of the late Mr. B. S. Williams, and at the old Paradise Nurseries there was quite a stock of it. In 1875, Rollisson catalogued both C. M. alba and C. M. "Sion House" at 3 guineas, and could have supplied a reasonable number of the true plant, which at that time there could be no mistake about their being propagated from the original single specimen, and in all probability we have descendants of them now in gardens named C. M. Wageneri and C. M. Reineckiana, although some thousands of ordinary C. Mossiae, imported at the same time, and left unpropagated, have died. My experience always has been that, so far from the dividing of Orchids being risky, it is the only means of keeping them alive and healthy. I could give many instances in proof of this, but I will content myself with three. The most pointed case is that of a specimen of the true *Masdevallia Lindenii*, which came into my hands many years ago, and which at that time was, I believe, the only one in the country. It had eleven leaves, and the plant was immediately divided into seven or eight pieces. The plants were afterwards divided as frequently as possible, the strongest being picked out and divided at any time, regardless of the season of the year. They always occupied the same corner of staging, and in the course of a few years, with what were distributed and the stock remaining, something over 400 plants could be accounted for. This seems almost incredible, but there could be no mistake about it, for the one plant of eleven leaves was the only one ever acquired. The increase, where successfully carried out, works on the same principle as buying a horse at a price based on a farthing for the first nail, the product to be doubled for each other nail in the shoes. The result is slow at first, but when you get fairly on the way, the amount is astonishing.

AN ETCOCHIL.

These plants I, like others, found to be very difficult to keep alive for any great length of time. The plants would grow well for a time, continually extending their creeping stems; then suddenly they went off. Ultimately, I made it a rule to take off every point as soon as a root was made at the base of the leaves. This was placed in a small Orchid-pan, in loam fibre and sphagnum-moss, and suspended like any other Orchid in a moist tank-house. I do not remember that one of these died so

long as this practice was continued, and the old stumps gave a good supply of fresh growths to treat in the same manner. This method meets the difficulties of our being unable to give these frail plants the same conditions that they get at home, and serves to perpetuate the plant in the same manner as propagation by cutting or dividing may perpetuate an annual without sowing every year.

BOLLEA CELESTIS

of Roezl's original importation was formerly in great demand. I had several good masses, and was fortunate enough to find a suitable place for them. The first or second plants to send out growths appeared to be flourishing, when suddenly the old imported piece died, and the growths followed it. Upon that occurring, I took to removing the new growths even before they were rooted, although the sheaths at the base showed roots pushing. These were placed in small Orchid-pans and suspended, and although some more of the imported pieces died, the new cuttings thrive.

In fact, wherever a plant has sufficient individuality to admit of its being traced, and sufficient value to ensure its being worth the while to be propagated, the same result is generally presented. As one of the most definite examples, we may take the case of the true *Cypripedium insigne* Sanderae. Had the original plant simply been grown on as a single specimen, it would even now be a plant of not very surprising size. But everyone has been intent on dividing it, and the consequence is that there are a large number of specimens of it all over the country, the dividing having caused the volume of growth to be increased a hundredfold at least more, than would be possible were it kept as a single plant, to say nothing of the risk of losing it entirely.

THE METHOD OF TREATMENT.

My object in making these remarks is to endeavour to get the opinions of others upon what I consider the rational manner of treating imported Orchids, so as to insure safe, compact, and floriferous specimens. I would advise cultivators that as soon as imported *Cattleyas*, &c., have made three pseudo-bulbs at each point of growth, they be nearly severed from the imported mass, and that at the ordinary potting-time they be quite removed; and if single specimens of good size are desired, that the whole of the sets of three or so home-made pseudo-bulbs taken from the same plant be potted up together, each with its leading pseudo-bulb pointing towards the rim of the pot in the usual manner—or if stock be required, each may be separately potted. The old mass, if in good material, might be left in the pot if it was occupying; and if it be kept thoroughly dry till new growth is being formed, it will soon form a new specimen.

With regard to the severance, partial or entire, of the leading pseudo-bulbs from the imported masses, some time before repotting and removal, I think that course is preferable; but if in some cases it has been omitted, the portions can be removed at the repotting time without any risk. The forming of neat, safe specimens by the removal and potting together of home-made growth, I recommend to be pursued as a rule, and not as an occasional operation; but I would like to state definitely that I do not consider that following the method recommended would bring any improvement in plants brought into a bad condition by being grown in unsuitable houses, or improperly managed, although with plants that are well cultivated in sanitary houses the most satisfactory results would, I

am sure, be attained. Those who have Orchids in an unsatisfactory state should always consider sanitation before adopting any new practice. *James O'Brien.*

PHOSPHATIC AND POTASH FERTILISERS.

The subject of fertilisers is one of great interest to gardeners as well as to farmers, and is likely to become more so as time goes on.

The value of all phosphatic manures depends chiefly upon the quantity of phosphoric acid they contain. This important acid element of plant food is mostly found in combination with lime, forming a phosphate of lime. The acid combines with the lime in three proportions, giving rise to three forms of phosphate, which contain different amounts of phosphoric acid, and therefore possess different values. This fact sometimes produces confusion in the mind of the gardener from a want of a knowledge of the laws of chemical combination. We will endeavour to make this matter plain by the following explanations in terms as simple as possible.

The first of these forms is that known as tricalcic phosphate—that is, one part acid to three parts of lime; containing, what is called in analysis, insoluble phosphoric acid, the commercial value of which is estimated at about 3*l.* a pound.

The second is known as bicalcic phosphate, containing one part of the acid and two parts of the lime, termed usually in analytical formulas, reduced phosphoric acid, the estimated value of which is about 5*l.* a pound.

The third form is known as monocalcic phosphate, containing one part of the acid and one part of lime, termed in analytical formulas, soluble phosphoric acid, the commercial value of which is estimated at about 6*l.* a pound.

Of these forms, the tricalcic phosphate is the least soluble in water, its solubility being estimated at only 1 in 100,000 parts.

The common sources of phosphatic manures are animal bones, phosphatic rocks, Thomas' phosphate, guanos, and farmyard-manures, in all of which the phosphoric acid is present, mostly in an insoluble form; but, as in the case of farmyard-manure, we believe, that when these substances are applied to the soil, finely comminuted, they are gradually changed into soluble and available forms by the agency of the plant-roots and of organic matters contained therein. In the case of "fine ground bones," it has been estimated from experiments that about 50 per cent., or one-half, of its phosphoric acid may be used by the crop the first year of application, 25 per cent. or one-quarter the second year, 15 per cent. the third year, &c. But this depends largely upon the character of the soil.

It has been thought that while the soluble form, namely, the monocalcic phosphate, gives the quickest return and is the most economical for general use, the insoluble forms make slow but safe and permanent returns also, and are cheaper. In other words, the monocalcic or soluble form (made so by treatment with sulphuric acid) make quick returns in the crop; while the others, like an investment of money, may make a partial return the first year, with similar slow returns, safe, but less profitable than the former. This, however, is an erroneous idea.

BONE MANURES.

The manufacture of phosphatic fertilisers was, at first, almost entirely from animal bones. These bone manures are found in the

markets in several forms, of which pure ground bone is the simplest. Fresh raw bones are estimated to contain an average of about 22 per cent. of phosphoric acid, or about 50 per cent. of phosphate of lime, and from 3 to 5 per cent. of nitrogen. Bone-black, which is the refuse of the bone charcoal, used in sugar refineries, is also used as a supply of phosphate of lime, and contains an average of from 32 to 34 per cent. of phosphoric acid, the nitrogen having been driven off in the burning. But bones have other value than for manure; they are often subjected to a steaming and reducing process for the purpose of obtaining the fat, gelatine or glue, they contain, by which they are deprived of the nitrogen,

demand for phosphoric acid. These mineral phosphates, although rich in phosphoric acid, hold it in the insoluble form; and their extreme hardness makes the process of reducing them by grinding very difficult. For this reason, the mineral rock after being ground as finely as possible is treated with sulphuric acid, converting it into what is known as superphosphate. Although ground very fine, the sulphuric acid acts very slowly upon the rock, owing to its hardness; and also to the presence of carbonates of lime, magnesia, aluminum, oxide of iron, and other impurities—and to mix it thoroughly, so as to have the acid to act on every particle of the phosphate, requires the most careful manipula-

acid, but its agency in reducing the substance to an impalpable fineness, to which its more speedy effects are due.

Many experimenters maintain, therefore, that phosphatic rock, if pulverised to a sufficient degree of fineness, may be employed as successfully as a manure as the superphosphate, and at much less cost. The soils most suitable for them, and on which they will produce the quickest return in the crop, are those rich in humus. Consequently, rich garden-soils to which large quantities of stable-manure have been added, are specially suitable for applications of ground phosphatic rock or of basic slag. And as these kinds of soils are always liable to become sour or acid, the withholding of sulphuric acid would be an advantage. *J. J. Willis, Harpenden.*

(To be continued.)

BEGONIA IDEALA.

IN fig. 121 we have the pleasure of portraying the most recent addition to the exceedingly useful winter-flowering Begonias raised by Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, from *B. socotrana* crossed with tuberous-rooted varieties. In our issue for November 21, 1900, an illustration was given of the hybrid, *Mrs. John Ideal*, and descriptions of twelve hybrids of this section. *Ideala*, as shown at the meeting of the R.H.S. on the 26th ult., when it was recommended an Award of Merit, is a dwarf grower, the plants being about 6 inches high, and the habit very neat. The flowers are semi-double, about 2 inches across, and of brilliant rose-colour. One of the best characteristics of Begonias of this section is that they hold their flowers so well. *Ideala*, for instance, retains them until quite shrivelled. That they may be obtained in full bloom during such weather as we had in November, and indeed throughout the winter, is quite sufficient recommendation for these showy plants.

PERENNIAL ASTERS.

(Continued from p. 385.)

SPECIES AND VARIETIES.—The varieties are so numerous and variable, that it is in many instances difficult to say to which species they belong. This is particularly the case with those of the "lavis" and *Novi-Belgii* types. There are many classed with *lavis* which appear more properly to belong to the *Novi-Belgii* type. In some instances, as in the *Amellus* and *Novae-Angliae* types, there is little difficulty in placing them, for though there is considerable variation in colours, they retain the distinct characteristics of the species. In the following notes I have selected the best and most distinct of the various "groups," after carefully going through a collection of upwards of 200 sorts.

THE A. AMELLUS GROUP.

Although we have several distinct varieties of *Amellus*, they do not appear to have been crossed with other species, for all are of the same habit of growth, and come into flower about the same time, and vary but little except in the colour of their flowers. They are of a dwarf branching habit, with loose panicles of large flowers of various shades, from pale mauve to deep violet-purple; and one variety, one of the best, is *Distinction*, which is of a distinct rosy tint; *Stella* is pale mauve, *Bessarabicus* deep blue-purple; *Framfield*, a lighter shade of blue-violet; *Onward* and *Riverlea* are also good; and *Bessarabicus* may also be mentioned. These are not so vigorous as the *Novi-Belgii* and



FIG. 121. BEGONIA IDEALA: FLOWERS OF A BRILLIANT ROSE COLOUR.

while the phosphoric acid is probably made rather more soluble. They are then treated with sulphuric acid in the proportion of 63 parts to 100 parts of the tricalcic phosphate contained in the bones. These are theoretically the proper proportions, but in practice a good deal less sulphuric acid is used, on account of its expense, which accounts for the fact that only a portion of the phosphoric acid found in the superphosphate thus made is soluble. In this process the sulphuric acid unites with a portion of the lime of the tricalcic phosphate, converting it into a monocalcic phosphate, which is synonymous with superphosphate of lime.

SUPERPHOSPHATE.

Mineral phosphates are now used to a much greater extent than bones, to supply the

tion. By the chemical action of the acid on the ground rock, not only is the more soluble monocalcic phosphate or superphosphate formed, but the mass is reduced to an extremely fine pulverulent condition, highly suitable to be acted on by the rootlets of the plant.

In accordance with the views of Baron Liebig, the use of sulphuric acid was believed to render the superphosphate more soluble and more assimilable to the plant, by its chemical action; liberating, so to speak, a certain amount of phosphoric acid in the soil, for the immediate use of the plant. But more recent observation and experience teach that inasmuch as the superphosphate made with the sulphuric acid reverts in the soil to its former condition, it is not the chemical agency of the acid in liberating phosphoric

other types, and require more care; but in a good, rich, loamy soil they do well, and either for the garden or for cut bloom they are indispensable. It is the *Anellus* varieties that are most extensively grown for supplying our markets with cut bloom.

THE A. CORDIFOLIUS GROUP.

This is a very distinct type, having large basal leaves, and usually slender flower-stems, with numerous small flowers, produced in long, pyramidal panicles. Of the varieties, *Diana* is one of the best. Photograph is said to be identical; but in the collection from which these notes are taken, they are quite distinct, the latter being of a more erect habit, and the flowers in closer panicles. *Elegans* comes close, but has a more distinct rosy tint. *A. c. major* has strong, branching flower-stems and larger flowers. The variety *profusus*, which received an Award of Merit from the Royal Horticultural Society on October 15, shows a great advance, and suggests that this species is capable of still further improvement.

THE A. DIFFUSUS GROUP.

In these we have some very pretty things, with long, spreading racemes of rather small flowers; horizontalis, with bronzy-brown foliage and numerous small flowers, the ray-florets flesh-pink, with a red-tinted disc, is most distinct; pendulous, taller-growing, with long, drooping racemes of creamy-white flowers.

Combe Fishacre comes near to this type, but has larger flowers; it is one of the best of all the *Starworts*, making a fine bush, with long, spreading racemes of bluish-tinted flowers, somewhat resembling a large *May-bush*. This is one of the finest for pot-culture.

THE A. ERICOIDES GROUP.

These are all of a slender, branching habit, with small, leaf-like foliage, and numerous small whitish flowers. *Clio* is dwarf, and dense in habit, and flowers later than the type; *densiflorus* comes very close, but has larger flowers, and grows taller; and *elatio* differs only from the type in growing taller. *Multiflorus*, which is given as a species, comes very close to the above; and *viminus*, with its varieties, may also be included in the same group.

A. Tridacanti is a magnified form of this group, having rather larger flowers, and making a spreading bush from 4 to 5 feet high; one of the best for late flowering, and makes a fine pot-plant.

THE A. LEVIS GROUP.

In this section there are often included many varieties which appear to belong to the *Novae-Belgii* type, and I shall take only those with the slender branching habit, of which *Chapmani* is a good type. In this the stem-leaves are very small, and the flowers produced in loose branching panicles; flowers pale blue or mauve.

Turbellus, though given as a distinct species, may well be included in this group; the type differs from *levis* only in having larger flowers. *T. elegans* flowers white, with a slight tinge of mauve, is a distinct and most desirable variety—certainly one of the best and most distinct we have.

THE A. NOVA-ANGLE GROUP.

In this we have a very distinct type. All of the varieties are of the same habit of growth, and have large flowers borne on erect rather stiff branching stems, with small woolly leaves. Although there is so little variation in growth, there is a considerable difference

in the time of flowering, and also in the colour of the flowers. *A. N.-A. Mrs. J. F. Raynor* is the brightest and most distinct red we have in all the *Starworts*, and comes into flower early. *Rubra* is nearly as bright in colour, and comes into flower quite a month later. *Rosea* is another late variety with smaller flowers, and grows much taller. Of those with purple flowers, *Præcocitè* and *præcox* are the best earliest; *Diadem* intermediate and *pulehellus*, and *W. Bowman*, the best late varieties. All of the above have large showy flowers, and are among the best for cut blooms, but they should be cut when the flowers are dry. In a damp atmosphere they close at dusk, but, if cut dry, in a warm room they will keep fully expanded, and last well. *A. Hemsley*.

(To be continued.)

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flouiden Road, Cambridge.

Seasonable Work.—It is advisable at the present season, where the weather does not always admit of work outside being carried on, to give attention to the requirements of the plants in the glass-houses. Where Orchids have to be cultivated along with other plants, there are so many items needing attention that little labour can be devoted to other matters, and the Orchids probably will have to wait. I do not here refer to Orchid-growers in places where these plants are a speciality, but to those who must grow their Orchids at some disadvantage. It is advisable that these plants, together with the other pot-plants, are afforded the necessary cleansing from insects and dirt. Scale insects can be easily removed at the present season, while the plants are at rest. The overhauling of the different houses of plants at this season means a considerable gain in point of time in the spring, when the plants are not so easily handled, owing to possible damage accruing to the young growths and flowers. The pots, staging, and roof, and everything about the houses, should be made clean, and every plant so placed that it can obtain the largest possible amount of sunlight. Evergreen Orchids are liable to get infested with red-spider at this season, owing to the constant use of fire-heat; and this fact is very marked this year. If these acarids remain for any lengthened time, the foliage gets much disfigured. The only remedy for this is to sponge the leaves with tepid water frequently, or till no more of them are observed. Such plants should be kept under observation the whole of the winter.

Affording Water must be very carefully performed. The needs of the various sections of Orchids, and the conditions under which they grow in their native country, are better known than was the case a score of years ago, and few mistakes are now made by cultivators. To afford water to plants at the right moment and season is one of the secrets of success, and as I pointed out some months ago in these columns there is need of great caution where Fern-roots are used in the place of crocks. It is during the resting season that this caution is most needed, owing to the absorbent nature of this material, which the roots will have penetrated in all directions. This accounts for the improved condition of the plants as compared with those growing over crocks in shallow pans. In Fern-roots, a plant may appear to be thoroughly dry on the surface, when in reality it is the proper condition lower down in the pot. This shows the need of a good deal of caution when applying water. When leaf-mould is the rooting medium, still greater care is necessary. My experience of leaf-mould is not large, but so far as I have experimented with it, I cannot recommend its general use. The chief difficulties in its use seem to be that it retains moisture for too long

a time, the lack of sunshine in our winters, especially in places near big towns, and the secarity of the material in view of the annual rotting. The excessive quantity of water required when leaf-mould is used will, I think, tend to develop premature growth in the plants.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Prestold, near Loughborough.

The Store.—During the winter, warmth is obtained solely from the heating apparatus, and that being the case, the temperature should not exceed 60° to 65° at night, and 70° on sunless or very cold days; but on sunny days 5° more will do good. As regards the affording of water to the plants, it should be just sufficient in the case of *Codiceums*, *Dra-cænas*, and other foliage plants to maintain them in health, more than that causing many of the roots to perish; and on the contrary, a very dry state of soil causes a loss of leaves. Thin out the superabundant shoots of climbers which are now out of flower, viz., *Stephanotis*, *Clematidrons*, *Aristolochias*, *Schubertias*, *Allamandas*, *Dipladennas*, &c., and fasten the shoots remaining in such a manner as not to prevent the sunlight reaching the plants beneath them. Later flowering climbers, *Ipomœa Horsfalliae*, and *Thunbergias* fragrans and grandiflora should be afforded weak manure-water occasionally. Arrange as far as possible either in the stores or in an intermediate-house the early plants of *Poinsettia*, *Euphorbia*, *Eranthium*, *Gesneras*, *Plumbago rosea*, *Contracegon*, *Toxicopileas* spectabilis, and *Thyracanthus* rufiflora, so that they will not be injured by damp or by the syringe when damping down. Bring into a higher temperature the later *Poinsettias*, which are just showing their bracts, these being of much value a month hence.

Gardenias.—Afford these plants a place in the stove or other house of the same temperature, as if kept in a cooler house the flower-buds may drop. For the last three months the *Gardenia* plants here have occupied a span-roof frame, having a temperature of 55 at night, but it is no longer advisable to leave them therein.

Gibbinias.—The tubers should now be shaken out of the soil and stored in boxes, with dry, sandy soil amongst them, in a place having a temperature of 55. Thus treated, the tubers occupy less room, and are more conveniently stored than in pots. Tuberous-rooted *Begonias* should be similarly treated, storing them away in a fruit-room or cellar where the temperature is not less than 55.

Caladiums should be stored in a temperature of 60°, and left in the pots in which they grew, or they may also be shaken out and laid in sand.

THE KITCHEN GARDEN.

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

Celery.—The latest *Celery* should now be earthed up, choosing a dry, mild day for the job. In some heavy soils it is necessary to use some fine coal-ash, sand, or refuse soil from the potting-shed around the stalks before earthing up with soil. Ground cleared of *Celery* should be levelled down, and prepared for the spring-sown Onions by bastard-trenching, and ridging it, with the ridges running north and south. The land may not need manure, but a dressing of fresh soot will do good, applying it when levelling the ridges in the early spring. Carrots, Beet, Salsify, &c., all do well on ground thus treated.

Potatos.—Sets for forcing should be selected, and stood the eye end upwards in trays or shallow boxes to half their height in some light kind of soil or leaf-mould. When the eyes start, reduce them to two, and these the stronger. A Peach-house or vinery about to be closed will be a suitable place for these sets, and they must be kept near to the glass. Sharpe's Victor and Veitch's Improved Early Ashleaf are excellent for forcing. The tubers

for out-door planting should be examined every few weeks, and the growths rubbed off them, until within a few weeks of planting time. Those for use in the kitchen require similar treatment, or the quality will soon be impaired.

Hot-beds.—Continue to make hot-beds of tree-leaves chiefly, for forcing Potatoes, Carrots, Radishes, &c., and putting into the frames soil to the depth of 12, 8, and 6 inches respectively, using a rather light, sandy kind for Carrots and Radishes. These last may be sown in shallow drills drawn at 4 inches apart; and as slugs are sure to be brought in with the tree-leaves, the plants must be dusted with freshly slaked lime, if damage is being done.

Turnips, Parsnips, and Artichokes.—Part of the crop of these roots should be lifted, and stored against a wall, covering them with sand, coal-ashes, or soil, with litter over all in frosty weather. If these precautions are taken, the roots are come-at-able in any weather.

Manure-heaps.—Advantage should be taken of hard frost, when digging cannot be done, to regularly trench the refuse heap, turning it all down to the ground, and throwing the least decayed portions into the centre again. Much of the refuse taken to this heap very soon decays if mixed with half-decayed tree-leaves, short grass, stable-dung, &c. The Vegetable-Marrow ridges should be cleared of the bine, and the dung beneath turned over and mixed together, and in about six weeks it will be in a fit state to dig in. If a small quantity of fresh lime be added to manure as the work of stirring it proceeds, decay will be assisted. I like to keep a smouldering heap going throughout the autumn, and get all the tree and bush-prunings, A-paragus-tops, Potato, Pea, and Bean-haulm, and weeds, when not too wet, charred, the ashes making a capital manure for most kinds of crops.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Pallimore, Pallimore Park, Exeter.

Achilleas.—There are several of the Yarrow family worthy of a place in mixed borders, or at the margin of the shrubbery, and useful when naturalised in the less dressed portion of a garden. One of the best if space be limited is the double form of *A. ptarmica* (Sneezewort), the terminal flower-heads of which having a good length of stalk are very suitable for cutting purposes. The variety called "The Pearl" has very double flowers, and is rather the better of the two. *A. millefolium roseum* is, as the name suggests, a rose-coloured variety, of about 2 feet in height, and pretty either as a patch by itself, or when grown in proximity to the double-flowered white. These three are suitable for planting in the herbaceous border, while *A. Eupatorium* (filipendula), which is of vigorous growth, reaches a height of 3 feet, and carries clusters of yellow flowers, which remain in good condition for a length of time, is better fitted for the shrubbery. The Achilleas will grow in almost any kind of soil, they are increased by division, and are of rapid growth.

Metotis grandis.—In this plant we have a nice addition to herbaceous perennials, growing about 2 feet in height. It is a showy plant, the bloom being of whitish-mauve, with a dark disc, and showing much resemblance to a *Marguerite*, but having more refinement. The plant should be placed in a sunny spot.

Dichytia.—There are several of these suitable for planting in warm, sheltered sites, viz., *D. chrysantha*, a yellow-flowered variety from California, which does best in a light sandy soil; *D. eximia*, which is not so particular as to position and soil; and the better known *D. spectabilis* (Dicentra), at one time much used for forcing, and forming a beautiful pot-plant when in flower. It is equally beautiful when grown in the open border.

Dictamnus fraxinella is another old plant which forms a dense tuft or bunch. It should

be planted in a sunny position, in light friable soil. The white-flowered variety is the most effective, and if planted near the purple-flowered variety, a good contrast is afforded. In order to increase the stock of these plants, dig up the roots carefully in the early spring and divide them, each with a portion of the crown attached. They may be also raised from seed, sown when ripe.

Begonias.—Tubers of bedding varieties which have been resting in the greenhouse or in cold frames, without water being afforded, should be stored in cocoanut-fibre refuse in boxes, and placed where frost will not reach them, as for example in a cold frame with several inches of cocoa-fibre refuse over them.

Dahlias.—The roots that were dug up being now dry, may be put into the root-store for the winter, or till required to furnish shoots for cuttings in February. Dahlia-tubers keep best in a cool dry place free from frost.

Paeonies.—Newly planted or established plants should have a mulching of manure.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Vines started early in the present month.—Whether the Vines are in pots or planted out in borders, the temperature will need, after the buds break, to be increased to 60° at night in mild weather, and to 55° in frosty weather, and to be gradually increased so as to raise it to 60° at night when the Vines are in leaf, 65° by day in severe, and 70° to 75° in mild weather with a moderate amount of ventilation. If fermenting materials are placed in theinery at the start, the evaporating troughs need not be filled with manure-water. For this purpose the draining from the cow-stall or the stable may be used, and failing these, use guano at the rate of 1 lb. to 20 gallons of rain-water; which is also suitable for applying tepid to Vines in pots. Fasten the Vine-roots to the trellis when the shoots have reached a length of 4 inches. In clear weather theinery may be damped twice or thrice a day, avoiding a close, moist air on the one hand and a dry one on the other. Disbudding should not be practised before the bunches show in the points of the shoots. Those who wish to cut ripe Grapes in the month of May should have the Vines started forthwith, employing a bed of tree-leaves and stable-litter placed on a staging of boards on the floor of the house, and turned two or three times a week. If there is an outside border, it should be protected with a covering of fresh tree-leaves and stable-litter. Provided this border was covered with bracken or litter in October, its temperature will be much higher than that of an exposed border, and in that case, fermenting materials may be dispensed with. The inside border should be afforded tepid water abundantly, so as to moisten the soil thoroughly; and for weak Vines use liquid manure in a diluted state. These Vines may be started with a night temperature of 50° in severe weather, 55° in mild weather, 65° by day unless when the weather is very frosty, when 55° will suffice, taking care not to exceed those figures before growth has begun. Maintain a moist atmosphere by syringing the Vines and all surfaces occasionally, but do not afford moisture in excess, or aerial roots will be formed on the rods. Depress the rods of young Vines so as to insure a regular break.

Mid-season Vineries.—As soon as the bulk of the Grapes is cut and the leaves have fallen, the Vines should be pruned without delay; any Grapes hanging on the Vines being removed to the Grape-room. To keep bunches hanging on the Vines after the leaves have fallen may not injure the Vines unless prolonged to a late period of the winter, yet the great amount of young wood thus retained keeps the sap more or less in circulation, and there is a certain amount of waste of energy going on which cannot take place when the Vines are pruned. Thinned-skinned varieties of Grapes do not

require so much maturing as Gros Colman and other thick-skinned varieties, and nothing is gained by leaving them on the Vines. By pruning, adhere to the system that has proved satisfactory. If the Vines are in good condition they will in all probability afford bunches sufficiently large if pruned to one, or at the most two buds. But if extra large bunches are wanted, or the Vines from weakness do not afford such large ones as is desired, leave longer shoots, being careful to select sound, round, well-developed buds on firm, ripe shoots; aim, in fact, at "finish." Large bunches are never so well finished as those of medium size. Vines that afford well finished bunches, if pruned to one bud will give a larger bunch, and one of equal finish from the second bud. If the soil of the border is rich, loose and deep, the chances are that the shoots will be gross, long-jointed, and the leaves thin of texture and of large size; if, on the other hand, the roots are in a firm, good soil, the wood will be stout and short-jointed, the leaves thick and leathery, and the buds round, plump and well-matured. Let the Vines be cleaned and dressed, and theinery well cleaned and purified; and the house kept cool so as to insure rest in the Vines.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Pyramidal and Bush Trees.—The pruning of Pears and Apples should follow that of wall trees; and assuming that the summer pruning was properly carried out, the chief operations now will consist of the shortening of leading shoots which have been left at their full length, or nearly so, at that season. These should be shortened much or little, according to their strength, remembering that if such shoots are not shortened enough a good break of shoots or fruit-spurs may not occur in sufficient numbers, and the symmetry of the tree will be spoiled, at the least for a season. Strong leading shoots, when further extension is desired, may be left $\frac{1}{2}$ to 2 feet in length, and they should be cut so that the terminal bud will point in the direction the resulting shoot should take. Weak shoots must be cut back to three or four buds from the base. Lateral shoots should be shortened to two buds each. On some varieties of the Apple, of which Lady Sudeley is an example, the fruit-buds come principally at the points of the shoots, and such varieties require careful pruning, or the crop will be greatly reduced in bulk; trees having this habit should be regularly root-pruned if growth is strong. The side branches of bush trees should not be allowed to grow up too thickly, but sufficient space afforded as will allow the sunlight to reach the inner parts of the tree when it is in full leaf. Trees having the branches crowded so as to exclude the light may have some of these removed, sawing them off almost close to the stem.

Pears are more commonly grown as pyramids than bushes owing to the natural habit of the trees favouring this form. The pruning at this season corresponds to that described for Apples; the spurs on the branches which have grown long being shortened to one or two buds, and a few of the longest removed entirely, and a fresh break encouraged to form in their places. Too much pruning is harmful, and where growth is over-vigorous the trees must be root-pruned.

Various.—Where grass-lands on the holes of fruit-trees were put in place in October, it may be necessary to put some more grease on the bands, as it will certainly have dried somewhat in the interval. The work of transplanting, root-pruning, &c., will still occupy the gardener's attention, the dry state of the ground favouring the work. Do not neglect to examine from time to time all fruit in store, removing decaying and specky fruits. A small amount of air should be admitted to the fruit-room occasionally when the outside temperature nearly corresponds to that of the room.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER. Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent in 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.

SALES FOR THE WEEK.

MONDAY, DEC. 9.—
Bulbs, Shrubs, &c., Stevens' Rooms; and Pollexfen & Co.; Bulbs at Protheroe & Morris'.
TUESDAY, DEC. 10.—
Fruit Trees at Protheroe & Morris'; Bulbs, Shrubs, &c., at Pollexfen & Co.
WEDNESDAY, DEC. 11.—
Bulbs, Flowering Plants, &c., at Stevens' Rooms; Bulbs, Roses, &c., at Protheroe & Morris'; and at Pollexfen & Co.'s; Greenhouse Plants, at Protheroe & Morris'; Rose Trees, &c., by Mr. H. W. Rendell.
THURSDAY, DEC. 12.—
Bulbs, at Protheroe & Morris'; Bulbs, Palms, Roses, &c., at Pollexfen & Co.; Shrubs, Fruit Trees, Roses, by Messrs. Michael Faraday & Rogers.
FRIDAY, DEC. 13.—
Orchids, at Protheroe & Morris'; Palms, &c., by Mr. H. W. Rendell; Bulbs, Flowering Shrubs, &c., at Pollexfen & Co.
(For further particulars see Advertising and columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—40°.

ACTUAL TEMPERATURES:—
LONDON.—December 4 (6 P.M.): Max. 4°; Min. 25°.
PROVINCES.—December 1 (6 P.M.): Max. 50°, Old Land's End; Min. 41°, Hertford.

We carefully avoid admitting into these columns any controversial matter of a political nature, even when it directly concerns horticulture. But, as all parties and men of widely different opinions are at one in anxiously awaiting the cessation of the war, and eagerly looking to anything that may tend to a permanent and satisfactory peace, we think it well to put on record a letter from a Dutch correspondent, and can assure our friends in Holland, as well as in other countries, that their animosity towards us is by no means reciprocated in this country; but that we wish nothing more than the maintenance of those "fraternal relations" which are of such advantage to all concerned.

The following is the substance of the letter which has reached us:

"HIGHLY HONOURED EDITOR.

"The Protestant Horticultural Society, 'Nanna Pompilius,' established March 16, 1900, No. 31, at Amsterdam, passed the following resolution at their meeting of the 19th ult.:—
"The meeting resolved:—

"Considering that many misunderstandings have arisen in connection with the South African struggle, and that therefore the greatest circumspection is necessary as regards the use of expressions against other nations, and especially with regard to matters which relate to or may relate to British affairs—
"That the mass of people, and not least those in the Netherlands, are generally very sensitive in the matter of nationality, and therefore run a risk of forgetting the interests of peace.

"That those who interest themselves in the politics relating to the South African strife should not lose sight of the above facts, and might well remember that England acts fairly and honourably in her business relations with others, and although the desperate nature of the struggle may have forced her to desperate

deeds, this is no reason for opposition to England, but, on the contrary, they should simply be imputed to the South African war. This, however, is used as a reason for abuse of many kinds, and it has even been proposed to lay hands upon a very sensitive vein of commercial unity which would simply aggravate matters.

"It is therefore resolved,—

"That it is very desirable that the boycotting plan against English shipping should be abandoned; that fraternal relations with the English people should be maintained, and that some arrangements should be made on that basis to put an end to the South African war; that Divine morality should take precedence of mammon, to the end that a great progressive step should be made in the direction of peace, however highly coloured the [accounts of] horrors of the war may be. (Signed) S. Baarda, Secretary of the above Protestant Horticultural Society, Mauritskade, 60, Amsterdam : November 25, 1901."

* * OUR ALMANAC.—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1902. 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.

SOLANUM CRISPUM (Supplementary Illustration).—The subject of our supplementary figure this week, a plant of *Solanum crispum*, growing in the nursery garden of Messrs. GAUNTLETT & Co., at Redruth, Cornwall, was, when the photograph was taken in June, covered with its corymbs of bluish-purple flowers. The corymbs are terminal, and from 2 to 3½ inches in length. The fruit, as large as Peas, are of a creamy-white. The species forms a spreading shrub, growing to about 12 feet high; and was introduced from Chile in 1826. It is too tender for growing entirely out-of-doors excepting in the warmer parts of the country, like so many other Chilean plants. The subject of our illustration was planted out-of-doors two and a half years ago, it being then in a 6-inch flower-pot, and is now 7 feet high and 10 feet in diameter. Few shrubs exceed it in beauty when in flower. The flowering season is the month of June.

THE SURVEYORS' INSTITUTION.—The next Ordinary General Meeting will be held in the Lecture Hall of the Institution, on Monday, December 9, when a Paper will be read by Professor W. SOMERVILLE (Associate), entitled "Artificial Manures." The Chair will be taken at eight o'clock. Notice is given that the Special Certificate Examinations will for the future be held once in three years. The next Examination will therefore be held in 1904.

ALTRINCHAM AND DISTRICT GARDENERS' IMPROVEMENT SOCIETY.—On Tuesday and Wednesday next, December 10 and 11, two concerts will be given in the large Hall of the Literary Institute, Altrincham, in aid of the Gardeners' Royal Benevolent Institution, the Royal Gardeners' Orphan Fund, and the above Society's Local Emergency and Orphan Fund. The concerts will be of a high-class character; the artistes include many of distinction in their various lines, and form one of the best combinations ever seen in Altrincham. There will be an entire change of programme each evening. A feature will be little girls selling flowers. It is hoped the efforts of the Committee will be again amply rewarded, and good results obtained. A

large number of the local clergy and gentry having already taken up a number of tickets, which, considering the large demands that have lately been made upon them, is very satisfactory. Since the commencement of these concerts in 1892, a sum of more than £100 has been raised by the Society for the benefit of the three Funds. It is hoped that still larger amounts will be realised this year. The Hon. Sec., Mr. A. BOARIMAN, will be glad to give any information regarding the concerts and the Society's Fund which anyone interested may require.

FLORAL DECORATIONS COMPANY, LIMITED.

—This Company has been registered by TRASS & ENEVER, of 25, Coleman Street, E.C., with a capital of £5,000 in £1 shares, of which 1,500 are preference. The objects of the Company are to carry on the business of importers, manufacturers, and vendors of artificial flowers, Palms, grasses, Ferns and decorations, florists, salesmen, gardeners, horticulturists, theatrical and concert agents. There will be no initial public issue. The first directors, to number not less than two nor more than seven, are J. P. SARGENT, O. C. SARGENT, J. SARGENT, and F. TROTMAN. Qualification, £25; remuneration for the first year £10 each, and £30 for the chairman. Afterwards the remuneration to be fixed by the Company in general meeting.

A FINE LATE CROP OF HAY.—WM. CUTBUSH & SON, of Highgate and Barnet, writes as follows:—"It may be interesting to your readers to know, that during the past ten days we have cut and carried a beautiful crop of hay. It is in very good condition, and is far superior to the crop we had in the summer. As this is somewhat unusual for the last week in November, we thought we would draw your attention to the fact."

ROYAL APPOINTMENT.—Mr. WILLIAM BELL, F.L.S., V.M.H., New Plant Merchant, 536, King's Road, Chelsea, has been honoured with the appointment of florist to His Majesty the KING.

A TUBEROUS-ROOTED LABIATE.—M. D. BOIS publishes in the *Bulletin of the Botanical Society of France*, tome 48, a note on a tuber made use of for food by the natives of the Soudan, and called by them Ousomfing. Those who are not unduly prejudiced against Latin names will prefer to call it *Plectranthus Coppini*, under which name the regretted Max CORNUT described the plant when it was originally introduced. It has been propagated at the Jardin des Plantes, and is recommended for culture in climates where the Potato cannot be grown with success. The tubers are formed in great abundance, are of an elongated oval form, about 55 mill. in length. The flowers are blue. M. Bois enumerates six other species of Labiate producing tuberous roots, in addition to *Stachys tuberosa*.

THE WHITE BLACKBERRY (see p. 393).—With reference to this "chromatic aberration," supposed to be the result of hybridisation," it is worth while calling to mind the white or amber-coloured Raspberry, the occurrence of which, so far as we know, has never been attributed to hybridisation. In the *Journal of Botany* (1882), p. 246, we find a note from Mr. JAMES W. WHITE, mentioning a variety of *Rubus discolor*, one of the commonest of our Blackberries, which yielded amber-coloured fruit. RAY in his *Synopsis*, ed. 2 (1688), mentions a *Rubus fructu albo*; SERINGE, in DE CANTOUILLE'S *Prodromus*, II., 561, mentions a variety of *Rubus thyrsoides* with white fruit. The occurrence of these white varieties seems to

have no relation to hybridisation, though it is conceivable that cross-fertilisation may set up changes in the nutrition of the plant, apart from those which are the result of actual admixture of different elements.

ADDITIONAL GLASSHOUSES IN DOVER HOUSE GARDENS.—Messrs. MCKENZIE & MONCRIE are at present erecting a block of plant-houses and corridor for J. PIERFORT MORGAN in the above gardens. The former will be used chiefly for the cultivation of decorative plants and Orchids, and will be connected by the corridor with the existing glasshouses.

FORMAL GARDENS.—Mr. B. T. BAINFORD, 94, High Holborn, announces the publication in three folio parts of a volume by Mr. H. INIGO THIBBS, entitled "Formal Gardens in England and Scotland, their Planning and Arrangement, Architectural and Ornamental Features," &c. The work is to be illustrated by 120 plates. From what has been said, it appears that this work will be chiefly of an architectural character, but from the beauty of the illustrations, and the interest of the gardens selected for representation, it will appeal also to garden lovers in general.

"**LOUIS WAIN'S ANNUAL.**"—This publication is issued by Messrs. ANTHONY TREHERNE & Co., 8, Agar Street, Charing Cross, and we cordially commend it to all lovers of cats. LOUIS WAIN here gives us many of his famous cat-pictures, accompanied by amusing letterpress by various authors, and edited by Mr. STANHOPE SPIGEE. Whatever be our admiration of the clever drawings in this book, we must regretfully admit that cats are bad gardeners, even if (as in this *Annual*) they are good card-players, musicians, riders, and skaters.

IRIS TECTORUM.—Writing from Japan in 1899, Mr. PETER BARR refers to *Iris tectorum* as seen growing freely on the thatched roofs of cottages in the country villages, and at the end of April and May producing masses of beautiful blue flowers rising from a rich green foliage. Mr. BARR goes on to say:—"The reason of this flower garden on a thatched roof is rather an economic than æsthetic one. All thatched roofs must have a ridge of some kind to throw off the water, and as the Japanese generally cast about to find something in Nature to answer their purpose, they found that the close-growing character of this *Iris* rendered it a good compact water-resisting protection: high winds being prevalent in Japan, to prevent the plants being torn off, they work into the thatch lengths of split Bamboo. Sometimes *Lilium Thunbergianum* and *Hemerocallis* may be seen on these roofs associated with the *Iris*. As there are many thatched cottages in the United Kingdom, there is no reason why a similar experiment should not be made in the warmer localities, such as the south and west of Ireland, Cornwall, Isle of Wight, &c. There is a story told of a woman who went to a Shinto priest to inquire how she could give a blue tint to her black hair; and he told her to get the colour from a flower which grew neither in heaven nor on earth; she tried the *Iris* flower from her cottage roof, and thus attained her object."

"**DAS PFLANZENREICH.**"—The two last parts of this publication, edited by Professor ESGLER, and intended as a compendium of the vegetable kingdom, are devoted to the Rafflesias and the Symplocas. Count SOLMS-LAUBACH deals with the former group, and Mr. A. BRAND with the latter family. The characters of the several families, genera, and species are in Latin, for which we are very thankful; the comments are in German. The illustrations, devoted to the representation of the

botanical structure of the flowers, appeal to students of all nationalities, and are very serviceable. The work is so gigantic in its scope that the present generation may never live to see it finished, but each separate part is complete in itself.

"**A SYMPOSIUM ON HOW TO GROW AND SHOW TEA ROSES.**"—This is a little manual of twelve pages dealing with the cultivation of Tea-scented Roses by exhibitors. The more useful chapters are those which concern Rose-stocks and own-root Roses, exhibiting, and selections of twenty-four and twelve best exhibition varieties. The handbook is the outcome of a suggestion of Mr. A. HILL GRAY, of Beaulieu, Bath, who gave a donation to the National Rose Society towards the cost of its publication. The instructions are written by the Rev. F. R. BURNIDE, Mr. O. G. ORPEN, and the Rev. F. PAUL ROBERTS, three well-known experts in Tea Rose culture.

GLORIA DANLIAS.—Mr. J. C. SCHMIDT, of Erfurt, sends us a coloured illustration of a new type of Dahlia that he is sending out. The ray florets are flat, as in a single Dahlia; the florets of the disc are tubular, as usual, but much elongated, forming a series of trumpet-shaped florets in the centre of the flower-head.

GARDENING IN EXCELSIS.—A correspondent writes: "It is nigh on half a century since the writer had his first view of London roof-gardening from that coign of vantage the top of the Monument, whence could be seen many a City tree hidden from pedestrians below, and thousands of massed pots on roofs, surely a delight to them who cared for them at sunset. But City trees are becoming things of the past, joined in their departure by the many floral genus. Now and again we hear of triumphs in City gardening, the latest placed on record is one flourishing in Liverpool. In the heart of that city there is a roof-garden tended by a lady, the space occupied is extensive, the occupants very numerous, the drainage excellent, and in addition to all the flowers in season, fruit is grown among the chimney-pots, where you can get your carbon at first hand. There are in successful cultivation Gooseberries and Currants, of various colours; also, in a greenhouse, exotics are to be found nodding at the ordinary flowers outside. The soil was carried to the roof by means of a lift. The Amateur Gardeners' Association, we are informed, have had photographs taken of this garden in *excelsis*. It is astonishing the quantity of hard usage flowering plants will put up with before succumbing, within a stone's throw of the great meat market of the city, and surrounded by filthy odours from lacon-driers, 'depositors,' never ceasing smoke and steam from railway engines, there live hosts of hardy plants, bright in all their colouring, and which seem to have the water-can applied to them at every hour of the day. Great blocks of 'dwellings' are being raised here and there, with more to follow; surely it would be an easy matter to so contrive it that every window-sill could be made to hold with safety a flower-box, the pots for which could be renewed month by month by enterprising nurserymen from the suburbs (taking away the worked-out flowers) at a very low charge—payable on delivery. Dense blocks of brick pierced with window openings could thus be made beautiful, and the lessons delivered by flowers contribute day by day to the moral and intellectual well-being of the town travellers. Another example of roof-gardening is on the roof of the Southwark Police Court, London; on this elevated position a court official has

tried to gratify both taste and appetite, Pelargoniums and other flowers growing in company with Vegetable-Marrows, which latter have the support of a loftier and adjoining building. Forestry in a mild form is represented by a couple of Oak saplings, taken from the Byron Oak at Newstead Abbey. The proximity of a magistrate has no terror for this Surrey amateur."

"**CALIFORNIA FLORICULTURIST.**"—This is a new periodical, beginning its publication with the month of November, and containing illustrated articles on: Papa Gottier Rose, Roses in Southern California, Climbing Rose Souvenir de Wootton, Surprises in Plant Families, Violets and Violet Culture, Bulbs for the Garden, Street Trees, Landscape Gardening, Cannas at the Pan-American Exhibition, Echinocactus cylindraceus, &c. The publication is to "teem with matter applicable to the present moment, be a veritable hand-book of the garden, and in every department to smack of the soil." The Pacific Coast is the district in which this *Floriculturist* is chiefly to circulate, but doubtless it will soon be known beyond that area. (Editor, ERNEST BRANTON; Publishers, 311, West First Street, Los Angeles, California.)

AGRICULTURAL BULLETIN OF THE STRAITS AND FEDERATED MALAY STATES.—Edited by H. N. RIDLEY. No. 1, vol. vii., October. This is the first part of a monthly bulletin, incorporating the old one (published at irregular intervals), and with an enlarged scope, intended as a medium for the exchange and record of planters' experiences in all that pertains to their interests. The lines on which it will be conducted will largely follow those of similar publications in other countries; such as the Agricultural Bulletins of Australia and some of the West Indian Islands, especially Jamaica, and it will include, among other things: leading articles by the editor and others; articles on forestry, labour supply, soils, &c.; extracts; entomological notes, insect and fungus pests; reports of meetings of planters' associations and their annual reports; reports on agricultural shows in the Colony or Federated Malay States; notes and queries; correspondence; market and trade reports; weather reports. The first number bears out this promise as well as possible, and we can cordially wish success to this undertaking in its new form.

SMITHFIELD CLUB SHOW.—The annual show of the Smithfield Club at the Agricultural Hall, Islington, will be opened to the public on Tuesday, December 10, and remain open till Friday evening, December 13. The hours during which it remains open are from 9 A.M. to 9 P.M.

PUBLICATIONS RECEIVED.—*Cassell's Dictionary of Gardening*, Part 1. *The British South Africa Company: History, Report, and Accounts*, March 24, 1900, and March 21, 1900. Presented to the shareholders at the Seventh Ordinary General Meeting at the Cannon Street Hotel, December 1, 1901. *Essays Technical, Agricultural, and Horticultural*. Winter School of Agriculture, Cheshamstead, Session 1901-2. Prospectus, 231 pp., and Table, also the *Essays Field Experiments*, 1900-1901. Part 1. *On Personal Pastures*. Compiled for the Council, by T. S. Deane. *Polish Soils: Their Pedology and Use*, Part 1. The *Stassfurt Potash Manures* in Agriculture, by James Wood (1845-50; printed and published by Carter & Pratt, 62, Bowhill Circus). *Published for a Flora of the Malayan Peninsula*, by Sir Mervyn J. C. Hill. *Prospectus*, from the *Journal of the Académie Scientifique de Cambodge*, by M. Komakura. *Le Japon*, Octobre 15. Contents: Echinacea speciosa, by M. Nagatomo. Variété de Echinacea, *Requart sur* and other papers and notes in Japanese. *Requart sur* *le Malabar des Châtaigniers dans les Alpes occidentales* (Savoie, Valais), par M. Louis Crie. Paris: Impression Nationale. *Rapport sur* *le Japon*, par M. Louis Crie. Paris: Impression Nationale. *Notes sur* *le Malabar en France au 19^e siècle*, par Lindove Legé. Marseille: H. Aubertin and G. Rolle. Rue Paradis, 21, and Rue de la Darse, 11-13.

NOTICES OF BOOKS.

THE BEST HARDY PERENNIALS. By F. W. Meyer. (Liverpool: Blake & Mackenzie.)

This is a series of coloured plates which have already appeared in a German periodical. To these Mr. Meyer has added descriptions, and many practical hints regarding cultivation, arrangement, &c. The details, of course, have been much modified from the German edition, as the conditions here are, as a rule, so much more favourable than in Germany. This is shown by the illustrations themselves, which, though generally accurate and faithful, do not represent the flowers in such fine condition as we are accustomed to see them on the exhibition-table, or even in the flower-border.

Mr. Meyer's aim is to illustrate and describe those hardy plants which are most useful for producing an abundant supply of cut flowers, and also for furnishing an effective display of bright colours in the garden. The hints and suggestions for arranging hardy perennials with a view to continuous, though diverse, effect throughout the season are very valuable, as also are the short cultural notes given under the heading of the different species.

The arrangement is alphabetical, which leads to the wide separation of plants which are by nature closely allied, and the approximation of plants, such as Achillea and Anemone, which have little in common. The text is not restricted to the plants illustrated, but many others of equal or greater value are mentioned; but as unfortunately there is no index, it is not easy to know where to look for them. The beautiful *Incarvillea* may be mentioned, but we cannot find it. *Centaurea montana* may be a native of Asia Minor, but it is very common in woods and pastures in certain parts of Germany and Switzerland.

The book will be serviceable to growers of hardy flowers, and will stimulate them to fresh efforts; for their use a series of blank pages for "memoranda" have been added, and it will not be much trouble for the reader to utilise some of them in the construction of an index, the deficiency of which is a drawback to the value of the book.

THE BOOK OF OLD-FASHIONED FLOWERS.—This deals also with "Other plants which thrive in the open-air of England." By Harry Roberts, with numerous illustrations reproduced from drawings by Ethel Roskrug. (John Lane, The Bodley Head, London, and New York.)

This book is likely to be popular, as there seems no end to the demand for books on gardening, or rather on gardens, that are nicely written and pleasant to read. The author himself describes the scope of his work as "One of a series of handbooks with an aim purely practical, and has itself an entirely practical object. This object is to teach those who are comparatively new to gardening the general principles which they must observe, if they wish to grow successfully those flowering plants which are able to live their whole lives in the open air of this country. By old-fashioned flowering plants, are meant those which we may class with the herbaceous, bulbous, and other hardy plants which one always expects to find in the old cottage gardens, old vicarage gardens, and old farmhouse gardens of romance, and sometimes of reality. One is continually discovering fresh old-fashioned people, and in like manner we are continually having additions made to our list of old-fashioned flowers. Many newly

discovered or newly-introduced plants, therefore, are treated in this book, which is not intended merely as a book of old flowers."

So we have a description of floral favourites, and directions for their cultivation, interspersed with a due number of literary and other allusions, making a pleasing whole neither too sentimental nor too grimly practical. Some of the information has been previously published, but as this fact is duly acknowledged there can be no objection to that. The illustrations are pleasing, and on the whole scarcely do justice to the beautiful blooms that inspired them, so cannot be accused of being flattered portraits of florists' productions.

FLORA OF GUERNSEY AND THE LESSER CHANNEL ISLANDS: namely, Alderney, Sark, Herm, Jéton, and the adjacent islets. By Ernest David Marquand. (London: Dulau & Co., 37, Soho Square, W.)

THESE are already floras of Jersey, so that a volume dealing with the vegetation of the other Channel Islands is particularly acceptable. Mr. Marquand has embodied in these pages notes collected during a seven years' residence in Guernsey, and acknowledges help received from various botanists.

Each island is treated as a separate area, possessing its own particular and distinctive flora, which is contrasted with that of the other islands, and with the flora of the French coast, and of the British Isles; so that botanists visiting the Channel Islands can at once turn to the information relative to any one district, and have no need to seek for it among much that is not under consideration at the moment.

There are some notes on plant-lore, which do not interfere with, but rather supplement, the scientific portion of the volume, and which are well worth preserving. The chapters relating to the physical features of the several islands are of great interest. That relating to Alderney should be the means of sending many in search of health and diversion to its shores, which are those least known of any of the Channel Isles; but, as shown here, by no means the least attractive. Though so near to the main land of France, it is the least French of all the Channel Islands, and the local *patois* differs from that of the other islands. Only a practical test, consisting of reference to this book in the Islands to which it refers, can fully prove its value; but it is certainly well and conscientiously put together, and the various excellent maps should add much to its utility.

The following extracts will show that the book not only appeals to professed botanists, but to naturalists generally:—

"The so-called *dryish Fern* (*Polypodium leptophyllum*), another non-British species, is exceedingly rare, and appears to be confined to the one spot where it was first detected by Mr. G. T. Derrick in 1877. The secret of its habitat has been so jealously preserved that hardly half-a-dozen persons have ever seen this delicate and graceful little Fern growing in Guernsey; so it continues to hold its ground, though I have observed that, being an annual, it is more plentiful in some seasons than in others. Mr. Derrick has informed me that on more than one occasion he had endeavoured to establish it elsewhere in this island, but without success.

"One of the most remarkable of all indigenous plants, and interesting also from the fact that it is found nowhere in the United Kingdom, except in Guernsey, is *Isotria medeoloides*, a very curious species, with a spiny, subterranean bulb, and a tall, slender, dark green leaves. It occurs more or less plentifully in several parts of Lamersee Common, but it is an extremely difficult little thing to detect, necessitating much patient searching on hands and knees, and, until one knows it, the digging up of many plants which may be to some thing else. *Isotria medeoloides* was first brought here by Walsley in 1801, and it was a particularly interesting and of his—better even than *Polypodium lusitanicum*, because at that date the existence of a terrestrial *Isotria* was hardly suspected, though several aquatic species were known."

"The exportation of granite has for very many years contributed in a large measure to the prosperity of the island (Guernsey), and millions of tons have found their way to nearly all parts of the kingdom. The stone is of excellent quality, and very durable, and it is shipped off either in large rough blocks, as when from the quarry, or dressed into cubes for street paving and building purposes. Large quantities are also exported after being broken up into small pieces suitable for macadamising roads, and it is said no stone in the world is equal to it for that purpose. Thirty years ago the quantity of granite exported averaged about 200,000 tons per annum; in 1897, it amounted to over 291,000 tons; and in 1898 the quantity shipped reached the unprecedented total of 306,639 tons.

"But during the last twenty years the fruit-growing industry has advanced by such leaps and bounds, that it has to a great extent eclipsed the stone trade. At the present day there are certainly scores, if not hundreds, of miles of greenhouses in the island, fitted up with all the very latest appliances and modern improvements, employing thousands of skilled workmen, and producing all through the year the finest fruit, vegetables, and flowers. Every week-day during the spring and summer months large shipments of vegetable produce leave Guernsey for the English markets, as many as 25,000 baskets and crates having been dispatched in a single day. The official returns show that the export of this kind of produce is at present more than six times as large as it was about a dozen years ago. The quantity for the year 1899 surpassed all previous records, and attained the enormous total of 1,683,496 packages, and during the three months ending June 20, 1900, the number of packages of Guernsey produce exported, viz. fruit, flowers, vegetables, bulbs, and plants, amounting to over half a million, the actual figures being 472,545. This kind of market gardening has proved extremely lucrative when compared with the old-time farming of small holdings, and, as a natural consequence, greenhouses have sprung up on every side with magical rapidity. How long the business will continue remunerative time will show."

PARIS.

THE PARIS MUSEUM.

The Council of Professors of the Museums (better known in England as the Jardin des Plantes), which on the vacancy of a Professor's chair meets to propose a candidate for the approval of the Minister, has lately been debating who shall succeed M. Maxime Cornu, *Professeur de Culture* at the *Jardin des Plantes*. Among the more likely candidates were M. Costantin, Professor at the *Ecole Normale Supérieure*, a distinguished botanist, known for his studies in fungi; and M. D. Boiss, assistant to M. Cornu, Secretary of the National Horticultural Society, author of various books on horticulture and practical botany, and *Professeur de Culture* at the *Ecole Coloniale*. The Council of Professors has accepted the candidature of M. Costantin. The *Académie des Sciences* will now be called upon to express its opinion of the proposition, before the Minister of Public Instruction formally names the candidate selected.

FRENCH HORTICULTURAL SOCIETY.

The Committee of the French National Horticultural Society has arranged that the Spring Exhibition shall be held in the conservatories at Cours-la-Reine, where the horticultural conferences were held in connection with the Universal Exhibition of 1900. This is by way of an experiment, which it is hoped will be successful, as the Society, which possesses no hall of its own, will then be secure from vicissitudes for a year. Last year and the year before, the Shows were held in tents in the Tuilleries Gardens, and the usual inconveniences were experienced; the erection and removal were expensive; but little light was obtained, but much dust and wind, and sometimes rain. Nevertheless, yearly in May and November, shows were held under canvas, until in May, 1901, a storm arose, and

a perfect inundation took place, with grave results for the exchequer of the Society. In consequence of this misfortune, all who had raised objections to tents renewed their statements that they were useless as shelters, and costly even when no floods occurred, whereas the large and fine conservatories at the Exhibition or at the Grand Palais des Champs Elysees could be used free of charge. The Committee made application for the use of the Grand Palais, and held a Chrysanthemum show there on November 6. This experiment was not wholly successful, although the show aroused much interest, and was largely visited. The principal dome of the Grand Palais, under which the plants were

divides the two houses. This would involve a *colonnade*, which would be expensive. It is not yet even certain whether the Municipal Administration of Paris will lend the houses without charging rent. So the Society has still no settled quarters for its exhibitions, though well housed as regards its library and offices.

FRUIT PRESERVED IN ICE.

Various experiments have lately been made in France with regard to the preservation of fruit, vegetables, &c., in refrigerating chambers. M. Loiseau, President of the Horticultural Society of Montreuil (Seine), showed at the autumn exhibition of the National Hor-

the foliage, bearing in mind the fact that the shoots of the current season must also be temporarily laid in likewise as they form. The tree shows its condition after the pruner and trainer have done with it in the winter. Taking the wall as being 9 feet in height, the tree has a width of 27 feet.

CRINUM CRASSIPES.

AMONGST the very interesting and conspicuous members of the genus *Crinum* which one sees all too seldom in gardens, considering that they are the most attractive, striking, and original-looking of plants that one meets, this species, if species it can rightly be called,

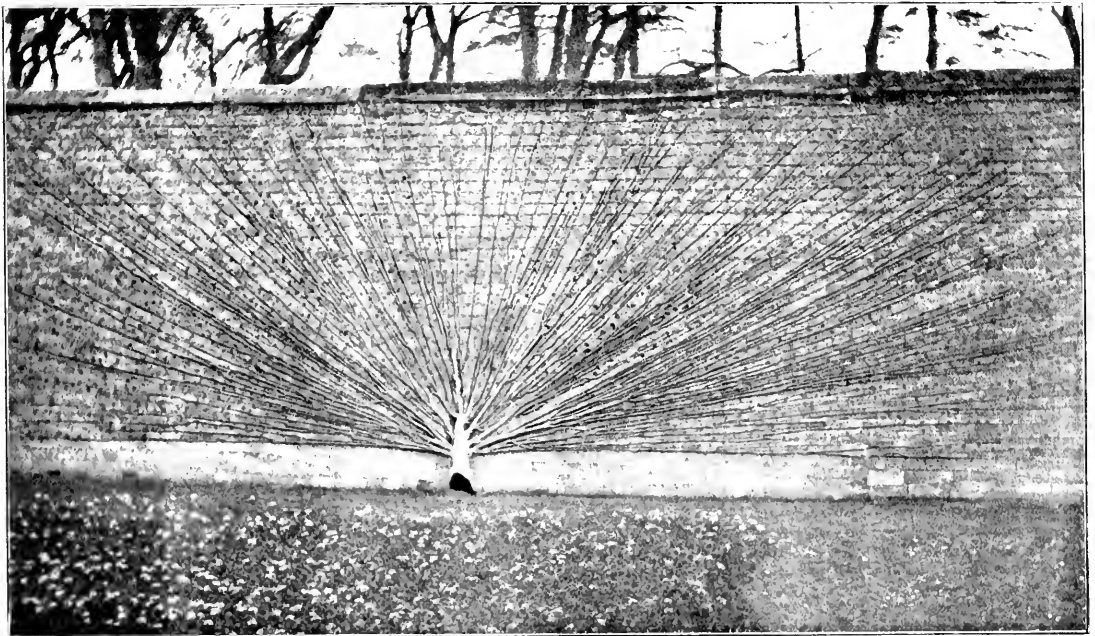


FIG. 125. A TRAINED MORELLO CHERRY, IN THE GARDENS AT STONELEIGH ABBEY.

staged, is lofty and glazed, so that low-growing Chrysanthemums, Begonias, Orchids, and Cyclamens, did not appear to advantage. It was also impossible to warm the building, and the weather being cold (33 to 35 F. in the early morning) the plants suffered much, especially the tender Orchids. Again, there was much fog and bad weather after the second day, so the visitors became fewer. However, over 72,000 francs were taken, and this paid off part of the May deficit.

Probably the houses at Cours-la-Reine will prove more satisfactory. They are less lofty than those at the Grand Palais, and they have a heating apparatus. They are well situated, ornamental, but fully exposed to the south, so that the sunshine is sometimes excessive. In the summer of 1900, plants on the borders of the Seine were burnt up; but in May this will probably not be so. Many persons think that part of the exhibition should be held in the open air; for instance, on the terrace that

divides the two houses, some Peaches perfectly preserved in refrigerators designed by M. Douano, of Paris. The Peaches were fifty-three and fifty-eight days in the apparatus. The sorts included ordinary Mignonne, Bonapartier, Belle Beaune, Imperiale, Alexis Lepere, and Galande. A large dealer offered 4 francs a-piece for the exhibit. The experiments will be extended. G. T. Grignon.

A FINE MORELLO CHERRY-TREE.

Our illustration of a Morello Cherry-tree growing in the kitchen garden at Lord Leigh's seat, Stoneleigh Abbey, Kenilworth (er. Mr. H. T. Martin), is a capital example of fan-training as applied to the Morello Cherry (fig. 125). This variety, and a few others which bear fruit on the wood of the previous year, and but little on spurs, as do the sweet Cherries, needs to have as many of these shoots laid in annually as may well be, without undue crowding of

stands pre-eminent. It is no bijou plant for a small conservatory, as nothing short of a half paradis-barrel will serve it for a pot, and even that must be raised so that one may walk underneath it, or get round about it in comfort without too much wasting of space. Its bulb reminds one (in shape) of the old-fashioned upright churn, is some 3 feet or more in length, about 8 or 10 inches in diameter at its lower end, and tapers up to 3 or 4 inches where its leaves begin to throw out. The leaves grow to a length of about 6 feet, and are 6 or 8 inches broad, long, channelled, and with a keel or midrib, gradually tapering to a point, and the outer ones arch over gracefully as they arrive at full size.

As they grow in whorls, the appearance is that of a fountain of huge leaves, spreading out on all sides, and forming a unique and beautiful object, that appeals very strongly to the imagination as a sort of "Garden of Eden" plant, readily captivating the attention of

visitors, who might expect to see it in *Dori's Bible*, but not in real life, unless as a recent find from "Darkest Africa," and in company with one or two of the tiny bushmen.

It is more liberal in the matter of flowering than the majority of *Crinum*s, for in the course of the summer it manages to throw out some four or five of its huge, assegai-like buds from the spaces between the leaves and the stem, and which make their way up with a determination worthy of their shape, for they often split up the bases of the leaves in the effort to get out of the narrow and confined space. As the spathe opens, a large cluster of up-curving buds speedily arrays itself into order, and the flowers begin to open in a spiral, commencing at the outside, and soon forming a huge bouquet of its white, very delicately scented, Lily-like blooms. These are borne on short peduncles of an inch or more, which pass into the seed-vessel, and go on and form the arched tube of the flower, splitting and opening out into the six segments which constitute the petals, which are $\frac{1}{2}$ to $\frac{3}{4}$ of an inch broad, the whole flower being $\frac{1}{2}$ or 6 inches in diameter.

Some six or eight of these are generally open together, and as there are from twenty to thirty buds in all, the display is kept up for a considerable time, and no sooner is one flower-stem finishing than another is found pushing up to take the honours. In all, the plant is blooming for between two and three months of the year. After flowering I have let it go to rest, chiefly because it has to be satisfied with cool conditions in winter, but I do not consider it an essential. *Crinum*s readily keep their leaves if given a little encouragement. In olden days, as a body, and with the exception, perhaps, of *C. capense* in its two varieties, they were always considered as occupants for the stove or warm greenhouse, but as a fact, when they came to be tested, they are for the most part quite temperate plants, and indeed nearly hardy, however much they may like a snug warm indoors, being like ourselves, perhaps, who strongly object to have our hardness tested.

To show their capacity in this direction, I may mention that a plant of this species stood out-of-doors in a pot in the open for months in the winter, and without any shelter, being frozen through and through. It had been forgotten apparently, and looked dead, yet in May a lively tuft of leaves began to assume sway, and it was unharmed. This may be told of many *Crinum*s, and might encourage many who have been too timid to try them to introduce one or two to the conservatory. They increase with fair rapidity, and beyond copious waterings in the summer, require very little attention; an occasional syringing to keep down thrips, which feel pretty secure under their large, spreading leaves.

A good start may be made for a cold-house with *Crinum capense* and *C. Powellii* or *C. P. album*; if with a little heat, *C. Moorei*. There the purchaser should pause, for *C. Moorei* has half-a-dozen synonyms, which often figure gaily underneath one another in a list, so that he will do well to consult an authority for his next venture. In any case, *C. Moorei* is the best representative plant of the genus, if he may grow but one, and there is no fear of his regretting this addition to his plants.

I have spoken above of *Crinum crassipes* as being a doubtful species, chiefly because I can never get it to give a seed, no matter with what *Crinum* it may be crossed, nor can I get any of its pollen to be effective on any other *Crinum*, or with itself, and usually a *Crinum* will seed with great readiness. The seed-pod, after fertilisation, soon swells up to a large

size, and the one or two seeds it contains look like Horse-Chestnuts. These germinate freely without heat, sending out their curious process, which sends a fat root downwards and a single leaf upwards, feeding the while for its first year also on the store of nutriment in the large seed.

The culture of *Crinum*s is very simple. They are devourers of soil in a sense that no other plants I know of are, that is, after a year or two in a pot, they are a knotted mass of roots, and there is very little soil left, although you know that you rammed the pot full when you re-potted it. To make this mass of roots and the big flowering-bulb, they like something good in the soil, which should be loamy, and they want plenty of water in their growing time to enable the virtue of the soil to be liquefied for their benefit. They are partial to shade, dislike strong sunshine, and in summer time they may stand out-of-doors, if preferred, where they will flower and make a striking group, as seen with a background of trees; and as for their great flowers, whether they are on the plant or brought indoors for decoration and fragrance, they are amongst the most captivating things of beauty I know. A. Worsley.

A VISIT TO THE NORTH.—VIII.

(Continued from p. 382.)

SOME EDINBURGH NURSERIES.

MOVING my headquarters for a time from Glasgow to Edinburgh, it became immediately apparent that the hotels of the more classical city were as thronged as those primarily affected by the exhibition. After some memorable experience that need not be recorded here, I was fortunate enough to "get in" at "The Clarendon," the proprietor of which excellent house, Mr. Hunter, is well known in the north as an amateur Orchid-cultivator.

I determined to see as much of Edinburgh horticulture as possible in the short time available, and it is with pleasure I acknowledge the courteous and kindly assistance afforded me by all those horticulturists I had the opportunity to call upon. It was only possible to visit four of the trade nurseries, but all of them are important ones, and of a typical character. These visits, not unexpectedly, served to show how largely the Edinburgh nurseries are devoted to raising stocks of hardy trees (a good proportion of which is sold through the trade or privately in England), and how little the art of indoor plant cultivation is practised in them. There may be no need to deplore these circumstances. I only state them because they are facts; and if Scotland purchases most of her indoor plants through English nurseries, and in return helps to furnish England's woods and pleasure-grounds with trees, it may be the best arrangement possible. But I cannot help thinking that if there were good trade collections of exotic plants in Edinburgh and also in Glasgow, these would tend more than anything else to stimulate plant cultivation in northern gardens.

One nurseryman told me that his glass-structures were next to useless to him. Gardeners had acquired a habit of sending to England for their tender plants, and they would continue to send there for them.

An exceedingly well-kept nursery is that of

MR. DAVID W. THOMSON'S,

in the Granton Road, past the Botanic Gardens, consisting of about 35 acres of land, all of which is now devoted to out-of-door culture. Immediately upon entering I noticed a group

of golden and silver variegated shrubs, as if for trial or comparison with each other. There were several pretty varieties of *Cornus*, including *C. Spithamii* var. *aurea*, a very effective shrub, but perhaps not sufficiently hardy for Edinburgh; golden-leaved *Weigela*s, golden and silver-leaved *Privet*s, golden Mountain Ash, &c., all of which are of a type too seldom planted in gardens in the district. A batch of one-year-old *Thorn*s attracted attention by reason of their robust growth and ample leaves. The varieties single scarlet, double pink, and Paul's double scarlet, were amongst these. White-flowered Broom, ready for sale, *Laburnum*s, *Spiræa*s, double-flowered *Cherries*, and other flowering trees and shrubs are cultivated, and there is a desire to keep as representative a stock of these pearls of the pleasure-grounds and park as experience with them in the district shows to be advisable.

Of the less ornamental trees there were most praiseworthy stocks. The Scots Firs (*Pinus sylvestris*), of which 100,000 plants were shown me ready for distribution, were stout, healthy examples, in the cleanest of ground, and had made the very best use of their time. They were "two by two," as the nurserymen describe them, which means that they had remained in the seed-beds two years, and had been transplanted an equal period, being therefore four years old from seed. The Scots Fir is very properly an important feature in almost all Scottish nurseries, and every nurseryman seeks to get his seeds from the most typical examples of "Native Highland Pine" as he describes it.

Most Scottish planters would purchase stock one year younger than those described above, such as "two + one" or one year transplanted, especially if required for slopes or hills. In England, four-years-old plants would be thought quite young enough.

There were large quantities of this Fir in other stages, including one-year-old plants, which of course were still in the seed-beds. These seed-beds are about 3½ feet wide, with alleys or paths between them. The seeds are sown in drills, and the plants thus obtain more air and are stronger than they would be if the same number of seeds were sown broadcast. Such seed-beds for the raising of forest trees are not nearly so common in England. An excellent lot of Beech was noticed, also ready for sale, being "two + three;" Oaks, Spanish and Horse Chestnuts, Larch, Hazels (chiefly for England), Spruce, Sycamore, Limes, Austrian Pine, Hollies, and Yews are all mentioned in my notes as being "excellent." Mr. Thomson pulled a young Yew out of the ground to show me that it was rooted "like the hairs of one's head," and it was! The very sandy loam of the nursery doubtless encourages the trees to produce many root-fibres. There were 140,000 plants of oval-leaved *Privet* shown me in one breadth.

Victoria Plums and other hardy fruit trees are cultivated in considerable quantities.

Mr. Thomson is the son of the veteran David Thomson, late gardener to the Duke of Buccleuch at Drumlanrig, and who is now living in the neighbourhood of Edinburgh.

MESSRS. R. B. LAIRD & SONS.

The nurseries of Messrs. R. B. Laird & Sons are at Pinkhill, Murrayfield, on the west side of the city, and about 3 miles out. Trams run nearly to the site, and buses quite thereto, and beyond. Both the proprietors, Mr. David Laird, who resides in the nurseries, and Mr. Robert Laird, are well known in horticultural circles north and south of the Tweed. Inclusive of the ground covered by the glasshouses and

other buildings, the area of the nurseries is rather under 50 acres.

At the Pinkhill Nurseries, there are still many glasshouses, I mean more than one sees in most of the nurseries in the district. They contained a very miscellaneous stock of plants, and a first-rate collection might easily be developed therefrom. Amongst a considerable number of *Codiciums* (*Crotons*), for instance, there were some seedlings, presumably raised on the place, that if presented in the best condition before the Floral Committee of the Royal Horticultural Society might win recognition. An inspection of the stove and greenhouse plants showed the new *Colens* thyrsoides, a flowering species of much utility and beauty, illustrated in *Gardeners' Chronicle*, January 19, 1901, p. 29. *Dracena Sanderiana*, pot Roses, the ubiquitous *Begonia Gloire de Lorraine*, and its sport *Caledonia*, in better condition than I had then seen this novelty; *Cologynis*; various species of Lilies, large Palms, &c. Remarking upon the strength of the *Begonia Caledonia* plants, the foreman informed me that he commenced with a stout cutting from the base of a plant, and subsequently propagated from leaf and bud only.

The most popular Tomato is *Stirling Castle*, which is said to resist the leaf-fungus (*Cladosporium fulvum*) better than most varieties. In the ground out-of-doors there are collections of forest and ornamental trees, Roses, fruit-trees, and other plants.

Of Conifers that have been found to succeed in the district, a considerable stock of moderate-sized plants is cultivated, including *Abies Paryriana glauca*, *Retinosporas*, *Thuja occidentalis*, *Piceas*, &c. The most conspicuous failure among the Conifers in this rather clayey land overlying sand is *Arucaria imbricata*. Fine stocks of the golden-leaved *Privet*, of the Golden Elder, *Mahonia aquifolia*, and *Rhododendrons*, especially *R. ponticum*, were remarked. A large number of Ivy-plants are grown in pots. There were satisfactory seed-beds of Larch, Firs, *Pinus Pinaster* (sown on May 5), Norway Spruce, Beech, Elder, &c.; Hollies were unusually well berried, including some varieties that have not previously fruited for years past. The seed offices, &c., like Mr. Thomson's, are in Frederick Street.

MESSRS. T. METHVEN & SONS.

In what is regarded as the home of Edinburgh nurseries — Inverleith Row — and immediately opposite to one of the entrances to the Royal Botanic Gardens are the grounds of Messrs. T. Methven & Sons, whose seed offices are in Princes Street. The business was established by the late Thomas Methven, and now belongs to his two sons, John and Henry. The nursery, in common with some others, has suffered greatly from the increased needs of the city, forfeiting some of its land to the builder. Consequently only fifteen acres remain of the old nursery in Leith Walk, and this area is planted with *Rhododendrons* and other hardwooded shrubs, termed "American plants." Altogether the firm cultivates some 70 acres, most of which is in Inverleith Row.

The nursery has an imposing entrance, and immediately the visitor passes through the gateway, some pretty borders of Conifers are seen, which afford illustrations of a number of species and varieties, and have a decorative effect also. Mr. Mackenzie, who has had the management of the nursery for many years, told me that the conditions were not such as all Conifers will thrive in. The soil consists of a layer of black mould, some 18 inches deep, and below this is sand to the depth of 19 feet or 50 feet. *Sophras* succeed pretty well whilst very young, but directly the roots get

down into the sand, or their tops rise above shelter, they cease to grow satisfactorily. However, there are strong-growing stocks of *Abies amabilis*, *A. nobilis*, *A. concolor* violacea, *Pseudotsuga* (*Abies*) *Douglasii*, *Picea pungens glauca*, *P. Engelmanni glauca*, *Retinosporas*, Japanese and Chinese Junipers (the Virginian species is less satisfactory), *Cupressus Lawsoniana* and the varieties *aurea* and *variegata*, *Thuayas*, &c. The two very best Conifers for the district, said Mr. Mackenzie, are *Thuja dolabrata* and *T. japonica* (*Standishi*).

Erica vagans alba is used here as an edging to some flower borders, in place of Box, which will not grow well. The Heath appeared capital for the purpose, and it may be cut with a scythe once each year, as required. The plants are a lively shade of green colour during ten months of the year, but in August and September present a beautiful show of flowers.

The firm of Methven has long possessed a reputation for Larch and Scots Firs, and there are good stocks of these at the present time, from this year's seedlings to three years old plants. Elms, Sycamore, Ash, Willow, and the common *White-thorn* are amongst species of trees most in request for planting in the district.

The stock of fruit-trees is large, there being 7 acres of land covered with it.

In the glasshouses there were stove and greenhouse plants, Ferns, a fine collection of tuberous-rooted *Begonias*, indoors in pots, and in the borders in the open air; pot Roses, Figs, *Gladiolus*, &c.

The nursery is well managed, and the stock appeared to be in the best condition. P.

(To be continued.)

HOME CORRESPONDENCE.

ASPECT OF SPAN-ROOFED GLASSHOUSES.

I believe, in so far as it concerns fruit-trees planted out under glass, the majority of cultivators favour the north and south for the longer axis. Indeed, this would appear the only method by which such a crop of fruit as grapes, for example, would secure about an equal amount of light on either slope, the one side receiving the full sun's rays from the time of rising, the other slope from noon to sunset. Any other aspect for a viney, seeing that the vine-rods are trained near the glass on either side, would be most unfavourable to one set of canes. It is much the same with any other fruit-tree under glass, but more particularly such as depend largely upon the proper maturation of the year's shoots. It is less important in the case of the orchard-house of pot-grown trees, because these ripen in the open air; and it is of lesser importance to flowering plants, and such as we term "soft-wooded." In this light let us take for example a set of houses separately devoted to Roses, Carnations, and Gardenias. The most valuable time for the flowers of these plants that is, when the highest prices are obtained—is the winter, and it is then that the sun-rays are of the greatest value to the plants; and we obtain the greatest amount of light and sun-heat at that season between the hours of 10 A.M. and 2.30 P.M. Hence the house, whose length runs east and west, and has its broad side to the south, obtains the greater amount of solar heat. No one better than a grower of winter Roses under glass knows the value of an hour or two of direct sunshine at such a time. If an observant man, he will trace its influence for several days when the crop is in a certain stage, and in like degree it is life-giving and stimulating to the plants. At the present time, on a clear day, this is distinctly noticeable, and as I have three houses in one direc-

tion, viz., north and south, and on each side of these other blocks in an exactly opposite direction, it is easy for me to note and compare results. Years ago, however, so far as flowers (and winter flowers in particular) were concerned, there was no doubt in my mind but that broad side to the south was the correct aspect. At this time of year, when the sun shines at all, there is life-giving glow about 10 A.M. in this house, and in conjunction with large squares of glass (18 by 20 in., I believe), the whole internal area is affected. It is quite a different atmosphere in the other set, despite the fact that the pitch of the roof is much steeper, for the sun is upon these for quite a short time comparatively, and its greatest heat at noon is hardly felt by the occupants. Needless to say, this block is reserved for a later time, when the greater amount of sunlight and its duration compensate for the lack of sunlight as well as sun-heat in winter. The flowers or crops mentioned above are all more or less influenced by sunlight and sun-heat, and Roses and Carnations to a remarkable extent; and provided the positions generally of the structures in this district may rightly be regarded as the outcome of experience, it may safely be assumed that "north and south" is right for fruit, and "east and west" for the flowers. And if we bear in mind in this question of aspect earliness of production, in so far as the winter flower-crop is concerned, there is no comparison between the two, and the house must run from east to west. There is, therefore, more points to consider than at first sight appear, and it is not merely the difference between the crops that grow, for equally important is the season also at which it is intended to obtain them. Hence, it is not possible to lay down a fixed rule, or if possible, at least it is scarcely practicable. *E. H. Jenkins, Hampton Hill.*

Referring further to Mr. Engleheart's recent query (p. 376), thirty years' practice has led me to think that in this, as in many other matters, perfection lies between the two extremes, and I should prefer houses running from north-east to south-west to any other aspect. A house built in this way catches the morning sunshine in the winter months squarely on its side, so that the rafters cause the least possible obstruction. The morning sun is all that is worth consideration during the winter, and in summer this factor is of less importance, as there is sun generally rather too much at it than otherwise. The great advantage of a house erected in this way is that the afternoon sun in the better months falls to the full depth of the rafters, enabling syringing and closing to be done within reasonable working hours. When built north and south, as generally advised, the house is often too hot to close on bright afternoons, so that the man in charge must either come back and attend to it after ten, or else leave it fully open all night, either of which courses is at times open to serious objection. *Chas. E. Pearson, Chiswell Nurseries, Loddham.*

Regarding the question asked by Mr. G. H. Engleheart, I beg to say that span-roofed houses should certainly be built due north and south, so that the occupants of the same, whether trained up under the roof-glass (as in the case of Grapes, Peaches, Figs, Melons, Cucumbers, and Tomatos), or growing in pots on side and central stages, as in the case of foliage and flowering plants, may have the full benefit of sunshine, morning, noon, and afternoon. *H. W. W.*

ASPARAGUS SPRENGERI.—Among the many decorative plants that we now possess, this is one whose value is becoming well known; moreover, it is a plant that thrives and grows luxuriantly equally well in the stove or the greenhouse. It is excellent as a plant for a basket, as for a flower-pot. In the window, entrance-hall, lobby, or corridor, it can be used with good effect in the summer months, for hanging around balconies and verandahs, or porches and doorways. Grown in a basket, it

vigour is such that in a short space of time the basket itself is quite hidden by verdure. Growers for market are raising the plant in large quantities. Recently I had the privilege of seeing this plant growing on a large scale at a nursery at Hillingdon Heath. The glass-house was 250 feet in length and 25 feet wide, and hanging from the roof, with just growing room, were numerous large and beautiful specimens of the plant; and the stages were filled with *A. plumosus nanus* and *A. tenuissimus*, well-grown healthy stuff. *Observer*.

MONTBRETIAS.—These bulbous plants possess such altogether pretty flowers that the interesting notes from Mr. Wolley Dod may not unprofitably be supplemented. Here the plants are not quite hardy, and I find it necessary to lift the whole of the comus and store them during winter in cold frames. I have not tried covering them deeply in the open, though I have thought of doing so; but it has two drawbacks. The one is, that if not planted very deeply, severe frost catches them; and if planted so deeply as to be beyond the reach of frost, there is the danger of losing the growths—shall we say from suffocation? Certainly I find that the growths fail to reach the surface when by any chance they are too deeply covered. Lifting annually and replanting in the spring is indubitably sure to cure that flowerless condition of the plants so often observed, especially on heavy soils. In the case of transplanted comus, every little shoot produces its flowers sooner or later. I remember when I got *Montbretia Pottsi* just after it was raised, I was told not to lift the plant in order to induce a floriferous condition; but as a consequence, while the clump continued to increase in bulk, it never flowered till I treated it like the hybrids, since when it flowers quite freely. The difficulty with regard to purchased comus not starting is easily overcome if they are potted when received, but my experience teaches me that no plant is less shy than these to grow. Comus two and three years old, and to all appearance destitute of vitality, if separated from the young comus and planted, may be depended on to produce foliage and also young comus. The disease which is mentioned I have never seen till the present summer, when it attacked *M. rosea*. In its effects the disease is exactly like that which is so fatal to *Gladiolus gandavensis*, for which, hitherto, no cure has been found. Reverting to the question of hardiness, like a great many other plants which are susceptible to autumn frosts, equally severe frosts in spring do no harm to the young leaves, consequently the plants may be returned to the flower borders or beds quite early in the season. They do well in any kind of soil, the only difference being, that plants growing in light and dry soil fail to grow so vigorously as in that of a better quality. They are wonderfully voracious of good fertilisers, such, for instance, as pigeon's dung, surface dressings of which may be applied during the season of growth. Superphosphate of lime is also an excellent fertiliser for the plant, and when during droughts, water is applied, invariably put some of the phosphate in the water. As to varieties, *M. crocosma-flora* is perhaps not so fine as *Etoile de Peü*, but it is, nevertheless, so good as to be worth growing. I very much appreciate, too, the neat little *M. Pottsi grandiflora*; it is so distinct and good as to be quite indispensable. Another omission is *M. rosea*—certainly one of the finest of border plants. If I were confined to two varieties, this should be one of them. It is not stoloniferous, but I find it safe to lift and store it with *Gladiolus*. It is now so plentiful that everyone ought to grow it plentifully. *B.*

STAPELIA GIGANTEA.—A plant so seldom seen outside of botanical gardens, yet the finest and most interesting of the whole genus, and worthy of a place in any garden. A photograph of a three years old plant, from cuttings, is sent, to illustrate how floriferous it is here at Colborne, in the garden of H. J. Elwes, Esq. The flowers, measuring over 12 inches in diameter, are pale yellow,

with purple veins. Altogether, the plant has borne seven of these flowers this season, and does not indicate any sign of weakness. It is propagated by cuttings; it is of easy culture when potted in fibrous loam, sand, and broken crocks, suspended from the roof of the plant-stove. *W. W., Colborne Park.* [For a full-page illustration of this fine species, see *Gardeners' Chronicle*, Dec. 22, 1888, p. 729. Ed.]

LATE-CROPPING PEAS.—I read with interest Mr. Wythes' article on "Late-cropping Peas" on p. 388. He there speaks highly of Antecro for late cropping. I know it to be a good mid-season or late Pea on fairly heavy soils, but he omitted to mention Chelsonian, a variety that I have tested for two seasons, and which I consider quite as good in every respect. Sown on June 10, Chelsonian, Goldfinder, and Antecro withstood the drought better than any other, and continued in bearing longer than the varieties mentioned. It is a variety with a strong constitution, has large and well-filled pods, and is of good flavour. The plant grows here to a height of about 6 feet. For places where long pea-sticks are plentiful it is one of the best of recent introductions. The soil of this garden is heavy. *W. J. Snelb, Wainpole Hall Gardens, Royston.*

THE CHRYSANTHEMUM RUST.—It is not a little surprising that, considering the general diffusion of this pest, there are so few communications from growers to the columns of the *Gardeners' Chronicle* on methods for its suppression. Very many who once held what were considered effective recipes for its destruction, have found that though effective at one time, they are not confident with regard to their value. It is curious, too, to find when inspecting various collections of Chrysanthemums, that some of them are quite exempt from the fungus, and the growers have to take no means against it, and yet they obtain some of their stock from other growers who meet with the disease among their plants. I have met with instances where a clean stock has been kept free from attack by not introducing new plants from outside sources. On inquiry, the fact has been elicited that isolation was not always successful, for while the collection may have been free for a season or two it suddenly reappeared, and that, too, in a severe form. Two collections have come under my notice this season, where not a leaf was affected by the rust; and in both the practice of exhibiting was unknown, though in each the plants were grown for specimen blooms for house and conservatory furnishing. Whether the non-use of chemical, or rich liquid-manure accounts for the absence of rust on the plants is at present a debatable point, for others are not similarly immune when a similar course is adopted. The opinion of some of your many readers on the origin and treatment of the rust cannot be other than interesting and instructive in the coming season. One of my acquaintances, a successful grower of Chrysanthemums, pinned his faith in the early part of the season on the virtues of nicotine-vapour, applied to plants standing in a house, allowing a greater strength than is usual for the destruction of insects. This no doubt had the effect of staying its progress for a time, but I believe symptoms appeared, as they so often do in the autumn months, just prior to or about the time of housing of the plants. Another substance which was heralded as a safe and effectual remedy has not always fulfilled the hopes of the user, though probably some failings may be attributable to a lack of energy and confidence in its application. Condy's Fluid is strongly advocated by some as a cure, so also is an emulsion made with petroleum and soft-soap rendered soluble by boiling for a short time over a slow fire. Next petroleum is applied by some, by the aid of a pointed stick or small camel-hair pencil, to the "spots" when, in the spring or early autumn, they are not so numerous; but while this usually infallible remedy for most plant-pests appear to destroy the power of the spores at the time of the application, the rust reappears later on with renewed activity, often bursting up outside, or on the edges of the spot already

destroyed by the oil. Cannot science come to the rescue, and give growers some good and cheap antidote? Many gardeners, after battling with the disease for so long and without success, have resigned themselves to the apparently inevitable, and now leave matters to chance. A bad attack is very disappointing, because the plants lose their foliage—and what value is there in flowers without foliage? Some varieties are more predisposed to be attacked than others, but once the disease intrudes, there are but few that are immune. An impression seems to have gained currency that highly-fed exhibition plants are those that foster the disease the most, which may be the case. *W. S.*

FRUITING OF PRUNUS PISSARDI.—I think I saw in the *Gardeners' Chronicle* some time ago a discussion about the fruiting of *Prunus Pissardi*. Now that the leaves have fallen, I have found several fruits hanging on young trees growing here, and although over-ripe, the flavour is very pleasant and the fruit full of juice. *A. Hillman, Ersham, Hantsham.*

SELECT VARIETIES OF BLACK AND WHITE GRAPES.—The suggestion of your correspondent "A. D." (see p. 398), that a census of the best six black and four white Grapes in commerce be recorded in the *Gardeners' Chronicle* is a good one. Here are my favourites. Blacks: Black Hamburg, Madresfield Court, Appley Towers, Black Alicante, Mrs. Pince's Black Muscat, and Lady Downes; whites: Canon Hall Muscat or Muscat of Alexandria, Buckland Sweetwater, Lady Hunt, and Mrs. Pearson. The names of the above-mentioned Grapes are placed in the order in which they ripen, and are therefore fit for use. *H. W. Ward.*

SYNONYMS IN GRAPES.—I observed in the *Gardeners' Chronicle*, p. 285, some time since, an interesting paragraph from your correspondent "A. D." concerning old and new Grapes. I am quite of "A. D.'s" opinion about the Muscat of Alexandria having numerous synonyms; so also has Muscat Hamburg, Black Hamburg, and many others. I am much surprised and disappointed with the Royal Horticultural Society for not having bracketted the synonymous varieties of Grapes in cultivation in this country, and classified black and white Grapes ere this. What a boon it would be to the younger generation of gardeners if you, Mr. Editor, or some one would send out circulars to cultivators of the Grape-vine, and endeavour to have an election, by points, of those Grapes of different names which are considered synonymous, and what points could be obtained for twelve best black and eight white Grapes in cultivation. I have witnessed a young gardener staging Howood Muscat and Muscat of Alexandria for two distinct varieties, but he got no award, and was disappointed, because he did not know the reason for such a decision. If the judges had written the word "synonymous" on the show-card, it would have saved much criticism. I have also known a gardener competing in a class for Black Hamburg Grapes who left his best bunches on his vines because they were named Champion Hamburg. What a pity that such blunders should take place! Let us try our best to remedy this. *A. Kirk, F.R.H.S., Norwood Gardens, Abou, N.B.*

VIOLETS.—A correspondent, "B. L.," asks at p. 383, what cause can be assigned or remedy suggested for the following apparently arrested bowering of Violets. He says:—"I live in Staffordshire; all round are gardens where Violets in frames flower well (as they should do) from September to May." Adding: "In my case the Violets (strong, large clumps) have for two years running been lifted into the frames at the end of August, buds have formed, five or six showing on a plant, and then nothing has happened; the buds have not damped off, but simply remained in a state of arrested development till the end of February, when they have flowered profusely." To my mind, as an old and successful cultivator of the Violet, the above-mentioned

facts seem to indicate the cause and suggest the remedy plainly enough. Strong, large clumps of Violets, assuming these to result from young, selected single plants, having good plump crowns, set out in good ground towards the end of April in rows, say 15 inches apart, and at the same distance from plant to plant in the row, and afterwards attended to in the way of pinching out superfluous runners, and stopping those retained to form the plants or clumps beyond the "crown" of each individual embryo plant, instead of being furnished with five or six flower-buds at the end of August, should possess four times that number of developed and undeveloped flower-buds. The fact of the five or six flower-buds showing on the plants at the time they were lifted "remaining in a state of arrested development" till the end of February, when the plants are alleged to have flowered profusely, goes to show that the plants were not very well established at the time, and that they may have experienced a check in the process of being transferred from the open ground to the frames by not having sufficient soil attached to the roots; and perhaps the after-treatment may not have been judiciously directed with a view to re-establishing the plants in their new quarters in as short a time as possible, while the conditions as regards weather were favourable to this end being attained. Hence the five or six flower-buds remaining in a state of "arrested development" during the interval elapsing between August and the end of February; and the fact of the plants flowering profusely at the end of the last-mentioned month justifies this assumption, and also affords conclusive evidence to support the inference that the energies of the plants were directed to the formation and production of a profusion of flower-buds during September and five following months—a period of time when the plants have been yielding a beautiful supply of fully-developed flowers. The remedy is: Grow the plants from the beginning in the manner suggested above, setting strong, single young plants (selecting those having large, well-ripened crowns) in good ground, in rows about 15 ins. apart, and at the same distance from plant to plant in the row, pressing the soil about the roots in planting. Stir the soil between the rows and plants with a Dutch hoe a few times during the summer months, to accelerate growth in the plants as well as to keep them free from weeds; and apply water at the roots and overhead when considered necessary, in order to promote and maintain a healthy and floriferous growth in the plants—large, well-established plants, liberally furnished with flowers and flower-buds in profusion, ready for transferring to the frames with good balls of earth adhering to the roots. A space of about 6 inches should be allowed between the plants every way, affording a clear space of about 2 inches between the plants and the glass. Make the soil firm about the roots in planting, afterwards afford water to settle the soil about the plants, and keep the frames close for a few days, syringing overhead in the afternoons of bright days until the plants have thoroughly established themselves in their new position. After which abundance of fresh air should be admitted day and night in the absence of frost and heavy rain—in fact, in the weather the sashes should be drawn off altogether, and replaced when adverse weather threatens. Damp is the great enemy to be guarded against during the winter months. H. W. W.

THE POTATO DISEASE.—It is somewhat disquieting to find in our late or maincrop Potatoes, that there is a good deal of what may be called latent or resting disease. Myriads of what are apparently sound tubers are when peeled found to be diseased, and an argument in favour of the practice of peeling the tubers is thus furnished. But the disappointment is specially great when it is found to be a constant feature; and complaint made to the greengrocer only results in getting the reply, "It is the same everywhere." It is so unfortunate that these evidences of disease are not

visible on the surface. Were it so the tubers could be rejected, but being invisible no one can tell the good from the bad. No doubt this re-occurrence of the disease, for we have not suffered much from it for a year or two, is due to the heavy rains and rather lower temperature of the late autumn; the abundance of moisture carrying the spores of the fungus to the tubers. Early crops of Potatoes, though not heavy because of the drought, were yet very good in quality, and there was no disease in them. Now that we are apparently, almost exclusively, dependent on that late variety *1 p-to-date* for our market supplies, its constitutional weakness has become evident. We seem still to be a long way from having an absolutely disease-resisting variety, and possibly whilst some have come very near to meriting that term, we never may. It would be interesting to learn, in face of this recurrence of the disease, if the Lordeaux Mixture remedy has been much in use—probably nowhere on any large scale. A really grave attack of the disease, such as marked the "forties," seems needful to arouse Potato-growers to the saving properties of this remedy. A. D.

Obituary.

J. H. KRELAGE.—It is with deep regret we record the death on the 1st inst. of Mr. J. H. Krelage, one of the foremost horticulturists in Holland. Jacob Heinrich Krelage was born in November, 1821, at Haarlem. He



THE LATE J. H. KRELAGE.

was the only son of E. H. Krelage, a native of Osabroek, Hanover, who founded the business at Haarlem in 1811. He soon extended his operations to Frankfurt, of which city by marriage with Miss Fresenius, he became a free citizen, and in consequence entitled to carry on business independently of the fairs. Year after year further extensions were made, and in 1811 J. H. Krelage undertook the management of the Frankfurt branch. In 1850 the son entered into partnership with his father, the firm being styled, as it still is, E. H. Krelage & Son. In 1855 the original founder died. The subsequent record of the firm is one long succession of extensions, and records of successes obtained in various exhibitions in Holland and elsewhere. In 1856 the Frankfurt business was given up.

The Darwin Tulips were among the most notable of recent introductions of the firm. They originated in the collection of M. Longbart, of Lille, which was purchased by Mr. Krelage. Mr. Krelage's knowledge of the history of bulbous plants was extensive and varied, and his library was the envy of collectors and the delight of bibliographers. Mr.

Krelage was a constant attendant at international and other horticultural shows, and was as much respected for his personal qualities as he was admired for his knowledge and his willingness to impart it. We reproduce a portrait showing the deceased gentleman ten years ago.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 26. *President:* Dr. M. T. Masters (in the Chair), Messrs. Houston, Odell, Draney, Chapman, Sutton, Saunders, Borkes and Hud-on; *Drs.* Rendle and Cooke, Revs. W. Wilks, and H. Bouslow, Hon. Sec.

Plasmodium, vesiculae porae.—With reference to lime as a remedy for clubbing, Mr. HOUTSON observed that with superphosphate the disease tended to increase, as it was of an acid nature; but the converse took place with basic slag, as it was alkaline and more destructive to the slime fungus.

Carpipedium usigne.—Mr. ODELL exhibited a blossom saving the two basal sepals distinct, instead of coherent, as is normally the case.

Daphne fasciata.—Mr. WILKS showed an example of this well known peculiarity. It has lately been stated that the immediate cause of incrustation or fasciation is the presence of an abundance of food in an easily assimilable condition.

Labellum R. barb. Mr. STETON regretted that he was unable to show samples, as it has again been met by the frost. Though flourishing at this season of the year in Australia, it has not yet become so much naturalised as to be available as a winter crop.

Artemisa phytolagum, foliis ovatis. Mr. HOWES exhibited a specimen in which the bracts had elongated into leaves, as not infrequently occurs in *Plantago*.

Fly Bulbs Discovered. He also brought bulbs and stages of the white Lily badly attacked by Botrytis, an unusual occurrence at this season of the year.

Laga Aloe. Dr. COOKE showed specimens of the outer bark of *Agnilaria Agallocha*, smoothed for the purpose of writing upon, from India, also a piece of the semi-decayed and highly resinous wood. The name is given in Greek *Xylodon* to the wood by Aetius, a Syrian of Mesopotamia in the sixth century. Dr. Etm. it is lignum aloe, i.e., Wood Aloe, from the odour and bitter taste revealed by a bite of the true Aloe.

Diseased Oxycodon. Dr. COOKE reported as follows upon the plants sent to the last meeting by Mr. JAS. BURGESS. "They are chiefly affected by the rather new disease caused by *Maesporium nodosum*, figured in Plate for *Hort. Journ.* as being mixed with *Pteleosporium echinulatum*, also named. The disease should be brought under control by picking off diseased leaves, and spraying with ammoniacal copper solution. Facile to spread rapidly from a great power of reproduction that it poses as in the fertility of the pores."

Laba Sp. etc. Mr. OUDL observed that in reference to the plant sent by Mr. Burdodge to the last meeting, the species which is apt to spread to a detrimental degree in ponds is *A. pinnata*, and not *A. lithoides*.

Plant Tree Roots Discovered. Mr. DEANS, of Wainsford Gardens, Lynnington, sent roots of Vine, Peaches, and Figs. Dr. COOKE observed that they were growing in a soil with decayed vegetable matter, in which myriads of fungi occurred. This then attacks the roots of living trees, and becomes parasitic upon them. When this is the case, the roots must be taken up carefully and thoroughly washed, and replanted in good soil.

Schubertiana, etc. Mr. DUNN exhibited a plant called *S. vulgare Drummondii* upon them. It is remarkable for its doubly incised and very imbricated edges, and a terminal cret to the root. It differs from the parental form, *S. crepitans Drummondii*, by a greater development of the imbricate character, and an entire absence of the diaphragm character seen in the parental form, which has smooth-edged roots, and somewhat imbricated nodes indicated. The variety shown is also more markedly apocarpous. The funiculars terminating in solid protheca, with a long hairy layer. The form is undoubtedly the most beautiful type yet developed in the species, being only rarely, probably created, and not so commonly in the place of the root.

Pithecolobium caribaeum.—Dr. MASTERS showed fruiting sprays of this New Zealand shrub, bearing grey, two-lobed berries, full of black shiny seeds. It is a hardy evergreen.

Epilobium.—He also showed a tilted bough of a *Epilobium*. It was probably caused by the attack of some insect.

Mendel's Law.—Mr. HUBER sent the following communication upon the application of Mendel's law to "intermediate" hybrid characters.—"Mendel's law of the dissociation of hybrid characters, according to the simple formula $A + 2Aa + a$ was enunciated in 1865, but it was not until a short time ago that the law was confirmed and re-established by the experiments and researches of Prof. Hugo de Vries, Correns, Tschermak, and Weibull. In addition to the above, we have been favoured with an admirable translation and exposition of Mendel's work in the *Journal of the Society by Mr. W. Bateson, F.R.S.* Hitherto Mendel's law seems to have been applied to 'discontinuous' hybrids only, and not at all to the more numerous characters known as 'intermediate' hybrids. Having for some years past made a special study of Or-land hybrids (which belong for the most part to the 'intermediate' class), I thought that it might perhaps be of some interest to ascertain whether Mendel's law held good in regard to them. A careful analysis of the inheritance of some 3,500 pairs of specific characters was therefore made in the following genera, viz., *Cattleya*, *Laelia*, *Laelio-Cattleya*, *Cymbidium*, *Dendrobium*, *Odonoglossum*, *Miltonia*, *Sobralia*, *Zygopetalum*, *Paphiopedilum* (*Cypripedium*), and *Phragmipedium* (*Selenipedium*). These experiments show that, with certain modifications, Mendel's law appears to hold good for 'intermediate' hybrid characters, as well as for 'discontinuous' ones, with the further advantage that the law can be applied to primary hybrids as well as to secondary ones, and to cross breeding generally, as well as to in-breeding by self-fertilisation. I hope to publish a detailed account of these observations with your kind permission in the *Journal of the Society* at an early date. Should these results be confirmed, the present scope and value of Mendel's law will be considerably extended, and we shall be getting a little nearer towards the solution of the problems of heredity."

NATIONAL CHRYSANTHEMUM.

DECEMBER 3.—The last meeting of the Floral Committee for the present season took place at the Royal Aquarium, Westminster, on Tuesday last, when the following awards were made:—

Chrysanthemum "Little Jewel".—A Spidery Japanese daisy of miniature size, full blown colour, deeper than that of Mrs. Carter. From Mr. W. J. GOMBUK, Exmouth Nurseries, Devon (Award of Merit).

Chrysanthemum C. J. Mer.—A rich yellow Japanese flower, of large size, and slightly reflexed florets. From Mr. H. WEEKS, Thurington Hall Gardens, Derby (Award of Merit).

Chrysanthemum Bush Canton.—This is a bluish-coloured sport from the popular late-flowering variety, L. Conning. Shown by Messrs. W & R OWEN, Maidenhead (First-class Certificate).

DECEMBER 3, 4, 5.—The winter exhibition of the National Chrysanthemum Society was opened on Tuesday last in the Royal Aquarium. There was as good a display as usual in December, and incurred flowers shown on boards were of remarkably good quality. Mr. HIGGS was again the best exhibitor of this type. The Japanese flowers are less fresh than the incurved blooms at this season, but a very commendable exhibit of twelve specimens was made in the class calling for that number.

In the class for twenty-four blooms, there were blooms of great size, but most of them lacked colour, or had lost their freshness, and consequently their attractiveness. It was again disappointing to see that the varieties staged were for the most part those which we saw in so much better condition at the November show.

Judges are far too ready to award prizes to the largest blooms shown, whether for good in colour or not, and whether fresh in appearance or not, consequently exhibitors try to hurry the largest exhibition varieties into bloom for the October show, and by "taking" different buds, and keeping the plants back as much as possible, present them again in December, although most of them can only be shown in perfect condition in November.

The exhibits in two or three classes were especially uninteresting, namely, those for twenty-four blooms, and for twelve bunches of flowers. In respect to the first-named class, the schedule says "twenty-four bunches, any section," and the exhibitors, thinking they must show "size," cut all their large, fading

flowers, and put them into these classes, occasionally more than one variety in a case. Such classes might be made useful to illustrate the best late-flowering decorative varieties, which at present are insufficiently represented at this show, through the preference given to "size."

Exhibits of Chrysanthemums, plants, fruits, and vegetables from the trade were numerous, and greatly increased the show.

BLOOMS SHOWN ON BOARDS.

In the class for twenty-four Japanese blooms, in not fewer than eighteen varieties, there were six collections staged. The principal variety in the first prize exhibit, from Mr. H. WEEKS, Thurington Hall Gardens, Derby, were Mr. R. 1 pton, Mrs. Meuse, Madame Carnot, Madame Cadbury, Australe, C. J. Warren, C. J. Mee, a flower with rather narrow florets, distinct yellow colour, Miss Maid Douglas, and several seedlings. Mr. W. C. MODRAL, gr. to Col. F. SHUTTLEWORTH, Old Warden Park, Biggleswade, won 2nd prize. The most distinct flower in this exhibit was one of the "Spidery" Fierces, with its broad, twisting, rather sprawling florets, showing shades of red, buff, and orange colour; Le Grand Dragon, M. Cheou de Leche, and others were of considerable size, but were not characteristic. Two specimens of Mrs. Barkley were better developed, 2nd, Mr. R. Kenyon, gr. to A. F. HILL, Esq., Monkham, Woodford Green. Amongst exhibits in this class was one from the Earl of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodale).

The 1st prize exhibit in the class for twelve Japanese blooms was not only of greater merit than the six other collections in the same class, but it was of unusual quality so late a date. The varieties were Mrs. Barkley, good in size and extra in colour; Madame Carnot, Graphic, F. Molyneux, Chatworth, Miss J. Colby, rich yellow colour; Mrs. Meuse, R. H. Langton, M. Parckouke, Mary Molyneux, surprise Admiral, and President Borel; 2nd, Mr. R. Kenyon, gr. to A. F. HILL, Esq., Monkham, Woodford Green; and 2nd, Mr. W. C. MODRAL.

Mr. APIN won 1st prize for six Japanese blooms. There were four exhibits of collections of twelve Japanese blooms from single-handed gardeners, for special prizes offered by G. W. Richardson, Esq., and the best was shown by Mr. W. Tipler, gr. to Miss SMITH BOURNIE, Hartwell Villa, Aylesbury; Mr. A. PAGE being 2nd.

The best collection of twelve Japanese blooms in the amateur section was one from Mr. A. Freeman, gr. to R. L. HARMSWORTH, Esq., M.P., Reveley Lodge, Bushey Heath; Mr. W. Tipler being 2nd.

INCURVED VARIETIES.

were good. The collection of twelve blooms from Mr. W. Higgs, gr. to J. B. HANKY, Esq., Felcham Park, Leatherhead, were unusually fine in size and general development. The best bloom in the exhibit being one of Bonnie Dundee, was of extra merit. The other varieties shown were Ralph Hatton, Frank Hammond, Miss Phillis Fowler, Laleine Egyptian, and Madlle Lene Faure, all of them good in quality for their part of the season. Mr. W. Neville, gr. to F. W. FLIGHT, Esq., Cornisties, Twyford, Hants, was 2nd; and Mr. J. H. GOODALE 3rd. An extra prize was awarded to Mr. Jno. APIN, gr. to W. MEATH BAKER, Esq., there being eleven collections in this class.

Mr. C. COX, gr. to J. TROTTER, Esq., The George Brickendon, Herby, won 1st prize for six Japanese bloom specimens; and Mr. E. BERRY, Esq., Gods, Oak, Chesham, 1st prize for a similar number of blooms from amateurs in Division B.

BLOOMS SHOWN IN BUNCHES.

The class for "twenty-four bunches of Chrysanthemums, any section," brought a great show of flowers, but the bunches were irregular and lacked interest, and the show in the 1st prize collection contained any number of blooms from three to five, and in several of the earthenware vases there were more than one variety. The 1st prize was awarded to Mr. Jno. APIN, gr. to W. MEATH BAKER, Esq., Haseld Court, near Gloucester. The brightest and best-coloured blooms (though not largest) were those of the variety King of the Yellow, 2nd, Mr. W. H. HOWE, gr. to AMY LAMB TATE, Park Hill, Streatham.

A similar class for twelve bunches, in not fewer than six varieties and three blooms as a fruit to each bunch, was won by Mr. W. C. MODRAL, gr. to Col. F. SHUTTLEWORTH, Old Warden Park, Biggleswade, and a class for six blooms (Amateurs) by Mr. W. G. FREDDEN-CLARK, York Road, Hitchin. In this exhibit were unusually fresh blooms of Madame E. Cadbury; and Col. F. Shuttleworth was shown well in Mr. Modral's collection of twelve bunches.

There was little worthy of remark in the class for six bunches of Japanese blooms. Some good blooms of well known varieties were shown by Mr. W. Tipler, gr. to Miss SMITH BOURNIE, Hartwell.

A collection of six bunches of large-flowered single varieties, from Mr. G. W. FORBES, gr. to Miss NICHOLS, Rectory House, Surbiton, contained the varieties Kate Williams, Rudbeckia, Violet Baylis, London Beauty, Black Prince, and Yellow Giant. These made a good show, and were awarded 1st prize, 2nd and 3rd prizes were won by Mr. A. PAGE, gr. to G. W. HILKER, Esq.,

Ravencroft, Moss Hall Grove, Finchley; and Mr. F. BUSH, gr. to W. T. LISTER, Esq., Rose Hill, Tottenham. Mr. G. W. FORBES had also the best blooms of small-flowered single varieties, and won 1st prize for six bunches, including the varieties Little Wonder, Little Red and Autumn Tins. Mr. A. PAGE was 2nd, and Mr. W. Tipler 3rd.

"Spidery," or decorative varieties, were also shown in collections of six bunches each. The 1st prize for these was won by Mr. Jno. French, gr. to Mrs. BARCLAY, Ambleside, Wimbledon Park; and his varieties were Golden Eye, Jestsuete, Cheveu d'Or, White Jestsuete, Mrs. Fikus, and Cannell's Favourite. Mr. A. PAGE was 2nd; his blooms of Mrs. Carter and Alice Carter were very pretty.

SMALL-LOWERED POMPONS.

In six bunches were shown best by Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highbury. There were two varieties only, Snowdrop (white) and Primrose League (yellow). Mr. W. C. PAGRAM, gr. to J. COURTNEY, Esq., The White, Weybridge, who was 2nd, had also Miss Mildred (late, larger than the Primrose League type), Perfectum (very small, bronze colour, with yellow centre), Miss G. Waterer (white), and Lilac Gem.

FLOWERS IN DECORATION.

Mrs. C. B. COLE, The Vineyard, Feltham, won 1st prize for a large vase furnished with Chrysanthemum blooms, there being six or seven exhibitors. She had used small decorative varieties exclusively. The same exhibitor won 1st prize for the best arranged vase of Pompon blooms.

The best vase of Chrysanthemums from an amateur, was one shown by Mr. T. L. TURK, gr. to T. BONES, Esq., Southwood House, Highbury. The blooms were arranged in the form of a great cone, and all of them were exhibition varieties of large size, and nice and fresh in appearance. 2nd, Mr. B. PESTELL, gr. to F. S. WIGRAM, Esq., Elbow, Bedford. There were numerous exhibits in this class.

PLANTS IN POTS.

In the class for six flowering Begonias there were two exhibits, and the variety in either case was Gloire de Lorraine. The best were extraordinary examples from Lady PIOTT, Wexham Park, Slough (gr. Mr. Jno. Fleming). They were in 7-inch pots, about 22 feet high, and more than 5 feet in circumference. In addition to the 1st prize, Mr. FLEMING was given a special award of small silver medal for "superior cultivation." They were the best he has ever seen. Mr. Jno. Fulton, gr. to F. D. LAMBERT, Esq., J.P., Moor Hall, Cookham, who was 2nd, had also commendable specimens.

The 1st prize in two classes for a collection of plants bearing flowers, berries, or ornamental foliage, was won by Mr. W. HOWE with a miscellaneous collection arranged upon a table. Some of the most showy plants in the exhibition were *Solanum capsicastrum*, *Acalypha hispida*, *Poinsettias*, *Bougainvillea*, *Roman Hyacinths*, *Cypripedium insigne*, *Cochlearia*, *Dracena sandieriana*, &c. There was no other exhibitor in the open class, or that for amateurs only.

There were not many Chrysanthemum plants shown.

NON-COMPETITIVE EXHIBITS.

Messrs. WM. CLIBRAN & SON, Alfrincham, Cheshire, exhibited a collection of single-flowered Chrysanthemums in bunches, representative of about seventy varieties, including a number of seedlings raised at Alfrincham. One of these, Mr. Will Jordan, a medium-sized flower of good form, of crimson-lake colour, with white band around the disc, the Floral Committee requested to have brought before them on a future occasion. Others, including white and variously coloured flowers, were prouided, particularly one named Sir Henry Post, a large-flowered variety, terra-cotta colour, with yellow centre (large silver medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, made a very large exhibit of vegetables, good in quality, and representative of most kinds in season. Also exhibits of Chrysanthemum blooms, exceedingly bright zonal Pelargonium flowers, and plants of Begonia Gloire de Lorraine, &c. Messrs. CANNELL & SONS were awarded two Gold Medals.

Mr. NORMAN DAVIES, Framfield Nurseries, Sussex, had a very extensive exhibit of Chrysanthemum blooms, with ornamental-leaved plants, &c., interspersed with them. This display was arranged around one of the fountains, which it furnished most effectively from base to summit. There were extraordinary blooms of Madame Carnot, Mrs. Meuse, and Madame E. Cadbury amongst others; and Robert Morgan, a bright crimson single, was displayed to advantage (Large Gold Medal).

Mr. R. C. PULLING, Monkham's Nursery, Woodford Green, Essex, made a display of Chrysanthemums upon the floor; the effect was very decorative, and some of the season's novelties were included in the varieties shown (Large Gold Medal). Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, made characteristic exhibit upon the same spot that he usually characterizes. The new incurved variety William Higgs, and many excellent novelties, were shown in this display, which contained also groups of Begonia Gloire de Lorraine (Large Gold Medal).

Messrs. W. & R. OWEN, Floral Nurseries, Maidenhead, exhibited a group of Chinese Primulas (Small Silver Medal).

Mr. E. F. STOR, Nurseries, Maidenhead, exhibited Apples, Begonias, and a few Chrysanthemum blooms (Large Silver Medal).

An excellent exhibit of floral devices was made by Mr. L. H. CALVERT, nurserman, Stoke Newington. The feature of this exhibit was a series of wire arches over a groundwork of mirrors. The arches were 3 or 6 feet high, and freely decorated with Chrysanthemum blooms chiefly of golden yellow colour. The furnishing was done well, and the sprays of Surlax and other flowers were added to the best effect. In the front were great stoves, apparently Derbyshire spar (Gold Medal).

Messrs. W. CIBBS & SON, Highgate, London, and Barnett, Herts, exhibited a group of miscellaneous flowering and ornamental-leaved plants. Ericas and Begonias, Lohmans, Permettias, A-stilbe japonica, &c. (Silver-gilt Medal).

Messrs. JNO. LANGRISH & SONS, Forest Hill Nurseries, London, &c., showed an attractive exhibit of 1901-blossoms of Apples, decorated with orange-trees in pots, Begonias, &c. (Gold Medal).

Messrs. ARTHUR & CO., Kingston, exhibited a collection of bottled fruits (Gold Medal).

Messrs. C. W. NIEUWELT & CO., Pinner Road, Harrow-on-the-Hill, exhibited some straw mats and barrow blinds—very useful forms of protection and shading.

NATIONAL ROSE.

The twenty-fifth annual general meeting of the National Rose Society will take place at the Rooms of the Horticultural Club, Hotel Windsor, Ascot, on Thursday, December 12, at 3.30 P. M., to receive the report of the committee, to pass the accounts, to elect the committee and officers for the ensuing year, and for the transaction of other general business. H. Honeywood D'Oubrain, Edward Maxwellton, secretaries.

A meeting of the committee will be held immediately after the annual general meeting to elect the general Purposes Committee for the ensuing year.

Proposed alteration of by-laws and regulations—Proposed that by law 2 be altered to read as follows:—

"That this society consist of members paying annual subscriptions of either one guinea or half a guinea."

Proposed addition to Regulation 2.—"But where sufficient prominence is given in the schedule to classes for decorative and Tea Roses, the committee may grant permission for a two-days show."

Proposed that Regulation 15 be altered to read as follows:—"Hybrid Teas are regarded as Hybrid Perpetuals in competition, unless specially excluded in the schedule, and may not be shown in the Tea and Noisette sections."

Proposed new Regulation.—"All boxes must be on the stages where they are to be judged, and all the lids removed fifteen minutes before the time appointed for judging."

Proposed that Regulation 15 be altered to read as follows:—"All blooms exhibited (except those specially directed in the schedule to be shown in cases of other receptacles) must be staged in boxes of the regulation size, viz., 4 inches high in front and 15 inches wide, and of the following lengths (all outside measurements): For twenty-four blooms, 3 feet 6 inches long; for eighteen blooms, 2 feet 6 inches long; for twelve blooms, 2 feet long; for nine blooms, 1 foot 6 inches long; for six blooms, 1 foot long; for eight trebles, 3 feet 6 inches long; for six trebles, 2 feet 6 inches long; for four trebles, 2 feet long."

The Twenty-fifth Annual Dinner of the National Rose Society will take place at the Hotel Windsor on the same day, at 5.30 P. M., E. B. Lundell, Esq., in the chair. Any Fellow wishing to attend the dinner should inform the secretaries of his wish before December 10.

LINNEAN.

NOVEMBER 21.—Professor S. H. VINUS, F.R.S., President, in the chair.

On the occasion of the meeting of this Society, Dr. A. B. RENDLE, F.L.S., showed specimens of *Rubus australis* (Forster), the New Zealand "Lawyer Vine," which had been sent by Mr. F. W. Burbridge from the Trinity College Botanic Gardens, Dublin. The specimens, which comprised three forms, furnished a striking example of variability within the limits of a single species. One, the leafy form, bore leaves with three large leaflets somewhat prickly on the stalks and midrib, recalling our native Blackberry. In an intermediate form the leaflets were much reduced in size, while the stalks were longer and much more prickly. In a third the flat leaf-surface had completely disappeared, the leaves now consisting of an elongated strong bearing, long, naked midrib, beset, like the leaf-stalks and the stem, with strong, short, recurving prickles, by means of which the plant clings over surrounding vegetation. Mr. Burbridge states that the three forms are from three distinct plants, reared from seeds sent from New Zealand; they are said to be

permanent under cultivation. The scandent type, with its complete collection of leaf-surface, is obviously adapted for growth under much drier conditions than the leafy one. In the xerophytic the assimilating material is stored in the cortex, but in the well-developed green cortex of the elongated stem, which in the second year becomes separated by the formation of a deep-seated cork layer, as was pointed out some years ago by Prof. F. W. Oliver.

As with our own *Rubus*, there is in the case of *Rubus australis* also some difference of opinion as to the limitation of species. In his *New Zealand Flora*, Mr. Alex. Peck, gives three varieties, to one of which he assigns all the three specimens now in question belong. Allan Cunningham, however, raised the varieties to specific rank; and Thomas Kirk, in his recent *Flora of New Zealand*, takes a similar view. It is interesting to note, however, that in the original specimen, now in the British Museum, which Forster collected, and on which he founded his species in 1796, two at least of these presumed species are represented, and the same remark applies to a specimen collected by Banks and Solander at Totaranui in 1791, and also preserved in the National Herbarium.

The President gave some account of his investigation of the proteolytic enzyme of Nephthies. He began by pointing out that, in the higher animals there are two distinct proteolytic enzymes: Pepsin, secreted by the stomach, and trypsin, secreted by the pancreas. The action of pepsin upon the more complex proteins albumin, fibrin, &c., is to convert them by hydrolysis into simpler proteins known as peptones; whereas the action of trypsin is not only to convert these proteins into peptones, but further to decompose the peptones into non-protein nitrogenous substances, such as leucin, tyrosin, &c. Among these final products of tryptic digestion there is a substance termed tryptophan, which has the property of giving a pink or violet colour on the addition of chlorine water. Hence this colour reaction may be used as a means of determining the nature of the digestion to which any protein may have been subjected.

As a result of previous researches upon the nature of the digestion effected by the enzyme of Nephthies, the President had come to the conclusion that it was not peptic, as had been supposed, but essentially tryptic. This conclusion has recently been called in question by Chautain, Acad. Roy. de Belgique, 1900, who asserts the peptic character of the enzyme. By means of the tryptophan reaction, which is readily given by the products of Nephthies digestion, the President has been able to verify the correctness of the view that the enzyme is tryptic.

The tryptophan reaction has also been found to be given by a number of extracts of plants which are known to contain a proteolytic enzyme; for instance, Pineapple, Pine Apple, Papain, Figs, germinating Bean seeds, &c. It is probable, therefore, that proteolytic digestion in plants is always tryptic. That there is, in fact, no peptic enzyme in plants, but there is a proteolytic enzyme of the trypsin of plants, that it has to work in an acid medium.

The President suggested that the proteolytic enzyme of Nephthies should be termed *nephthiasin*, as that of the Papaw is termed *papain*, and that of the Pine apple *bronnin*.

A paper by Mr. T. F. CHEESMAN, F.L.S., on the "Flora of Karoo-land," was read on his behalf by Dr. G. O. WILKINSON, Esq., who showed some of the more interesting plants collected on the island. Mr. Cheesman spent three months in 1870 on Karoo-land, the chief member of the Good group, situated between the Tongan and Society Islands, in the South-Eastern Pacific Ocean. The papers are the first enumeration of the vegetation of Karoo-land, comprising a total of 334 vascular plants. The Ferns are most numerously represented, with 181—seven species, twenty-five grasses, nearly as many Leguminosae, followed in due succession by Euphorbiaceae, Solanaceae, Compositae, Rubiaceae, and Melastomaceae, the remaining orders have less than ten representatives each. Eighteen species are regarded as endemic, and are described as new, amongst them being the striking *Platyra spicata*, Cheesm. Native names have been recorded when ascertainable.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 25.—The sixth annual exhibition was held in the Music Hall, Aberdeen, on Friday and Saturday. The entries showed an increase of 150 over those of last year, numbering nearly 700, and they came from Surrey, Kent, and Devon in the south, to Caithness and Ross-shire in the north. While the whole show was chiefly the groups of Chrysanthemums and foliage plants competing for the Challenge Trophy, presented by the seed and nursery trade of Aberdeen, were a considerable number of notable exhibits. The Chrysanths were mostly won by Mr. Robert Masson, of 10, WILKINSON BISSLE, Albany Place, Aberdeen, and Chairman of the Society. Mr. John Proctor, of 2, St. WILLIAM HENDRICKSON, of Vancouver, was 2nd. The display of cut blooms in the section competing for the Challenge Trophy, presented by the Hon. Presidents of the Society, for thirty-six blooms of

twelve different varieties, was an excellent one, and Mr. JOHN PRIDE, of Strachan House, Aberdeenshire, won 1st prize. An exhibitor from the far north, Mr. Alex. Park, of 10, St. David's Street, Leuchlin House, Ross-shire, was 2nd. Mr. PARK won premier honours for three blooms of yellow Japanese Chrysanthemums, and a special prize for three vases furnished with distinct varieties.

In a superb display of mixed blooms, Mr. A. PATTERSON, of the Edinburgh House, won 1st honours in the competition for the best twelve varieties, and Mr. Alex. Park, of 10, St. David's Street, Leuchlin House, had 1st place in the competition for the best eighteen Japanese varieties.

The gen. of the show was the specimen of *Nellie Pockett*, shown by Mr. ROBERT MASSON. Mr. MASSON'S specimen plant of this variety had forty-two magnificent blooms upon it. Mr. W. Wells, of Redhill, who was one of the judges, declared that he had been at home in London, Edinburgh, Liverpool, and Birmingham, but the plant of *Nellie Pockett* shown at Aberdeen was the best he had ever seen.

Amongst the amateurs, the leading prizes were taken by Mr. J. F. JENKINS, Clifton Road, Aberdeen; Mr. JOHN TOWSE, Great Western Road, Aberdeen; and Mr. J. D. SMITH, Allan Street, Aberdeen.

There were displays of floral designs exhibited by local nurserymen and florists, including Messrs. J. & S. BIRD & CO., Messrs. W. SMITH & SON, and Messrs. JAMES COCKER & SON.

The arrangements were admirably carried out by the Secretary, Mr. M. H. Sinclair, and his committee.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 21.—At a meeting held on the above date, S. GRYLLS, Esq., Whalley Range, gr., Mr. G. Cypher, made a handsome display of *Cypripediums*, including a finely marked form of *Cypripedium insigne*, C. i. var. *Mary Anthea Gratrix*, which was awarded a First-class Certificate. C. i. George Cypher received an Award of Merit. C. x *Bookeri* (cultivars: *Speeriantha*), a finely-colored flower of good form, also gained an Award of Merit. A Silver Medal was awarded for the group.

Mr. W. S. HILL, Esq., Bury, gr., Mr. Babforth, showed a good and distinct form of *Cypripedium insigne* var. *Sanderi*, called "Monkholme var." (First-class Certificate).

A. J. LEES, Esq., sent a small group of plants principally *Cypripediums* (Vote of Thanks).

W. E. WILSON, Esq., sent a group in which were one or two handsome *Cypripediums* (Drove Medal).

G. O. WILKINSON, Esq., Bury, gr., Mr. Roberts, staged a very excellent group of *Cypripediums*, A. c. *Leucum* var. *virgata*, and C. *insigne* var. *Marion*, received Awards of Merit. A Silver-gilt Medal and Cultural Commendation were awarded for the group.

Mr. A. J. KEELING, Bingley, Yorks., received a First-class certificate for *Cypripedium insigne* var. *Brightness*, and an Award of Merit for C. x *Adonis*, High View, gr.

Mr. J. ROBINSON, Altrincham, exhibited a good cross, said to be *Cypripedium concolor* x *Lawrenceum*, but which differed very much from known varieties of this hybrid. It was called C. *concolor*-*Lawrie* Robinson's var. (First-class Certificate).

Messrs. STANFORD, ASHTON & CO., Southgate, exhibited a collection of choice plants, among which were *Lelia catleya* x "Hether" H. *Leudrasa* x C. *ignea*, a fine flower with a very rich crimson lip. First-class Certificate. *Catleya Julia*, a good hybrid between C. *Bowringiana* x *Clabata* *antimadalis*, the flower intermediate in character, one of the best hybrids yet seen out of C. *Bowringiana* (Award of Merit), and *Lelia Catleya* x *Deera* x *Sipera* (Award of Merit).

Mr. L. W. LINDEN, Brussels, exhibited *Cypripedium chinianum* var. *London*, previously figured and described in these columns (First class Certificate).

Catleya x *Lansbergii*, from the same exhibitor, is an interesting plant, being a hybrid between C. *area* x C. *labiata* *antimadalis*, P. H.

TRADE NOTICE

MR. EDWARD J. PARSONS, for the past four years traveller for Messrs. Kent & Brydon, Darlington, has been appointed manager of the seed and bulb departments in the nurseries of Messrs. R. Smith & Co., Worcester. Mr. Parsons was engaged for eight years in these departments at Worcester previous to representing Messrs. Kent & Brydon.

Messrs. ALEXANDER DICKSON & SONS, in order to facilitate their trade in the midlands and south of Ireland, have opened an establishment at 61, Dawson Street, Dublin, where the firm purposes carrying on the seed, bulb, nursery, and florist business in all its departments.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period November 21 to November 29, 1901. Height above sea-level 24 feet.

Table with columns for DATE, DIRECTION OF WIND, TEMPERATURE OF THE AIR (Dry Bulb, Wet Bulb, Highest, Lowest), TEMPERATURE OF THE SOIL (1 ft. deep, 2 ft. deep, 4 ft. deep), and LOWEST TEMPERATURE IN GRASS.

Remarks.—The weather for the past week has been dull, cold, and dry.

GENERAL OBSERVATIONS

The following summary record of the weather throughout the British Islands, for the week ending Nov. 29, is furnished from the Meteorological Office:—

The weather during this period was dull and dry over our Islands as a whole, but slight falls of rain were frequent in the extreme north and north-west, and very slight falls were also experienced at times in most other districts, especially on our western coasts. Fog prevailed over central England at the beginning of the week.

The temperature exceeded the mean in Scotland and Ireland, N., but was again below it in England, S., and in England, N., in the Midland Counties, England, S. and S.W., the deficit was as much as 4°. The highest of the maxima were recorded, with few exceptions, on Saturday, when they reached 50° or 52° in most districts, 55° in Scotland, N., and 51° in Scotland, E. The maxima on the 24th were no higher than 25° at some stations in central England. The lowest of the minima, which were registered during the early days of the week, ranged from 15° in Scotland, E., in the Midland Counties, to 20° or 22° in Ireland, and 12° in the Channel Islands.

The rainfall was less than the mean in all districts; and the greater part of the Kingdom the fall was scarcely appreciable.

The height of the snow exceeded the mean in England, and also in Scotland, E. In all other parts of the Kingdom, except in Scotland, N., where the snow was not equalled, the amount was deficient. The percentage of the possible dryness varied from 100 in England, S., and 32 in England, E., to 10 in Scotland, N.

THE WEATHER IN WEST GERTS

Last past week was a mild one, and at night did the thermometer exposed on the lawn show more than a trace of frost. The soil temperatures are rising, but both at foot and 2 feet deep the ground is still about 1° colder than is seasonable. No rain worth mentioning has now fallen for three weeks, and no considerable quantity of rain-water has come through the bare soil percolation-gauge for nearly a fortnight. The sun shone on an average for only about an hour a day during the week. The winds were of moderate strength, and the air rather dry. The last Rose of the year was destroyed by frost on the 26th ult., when it twelve days earlier than the average date of its destruction in the previous sixteen years.

NOVEMBER

Taken as a whole, this was an unusually cold, dry, and sunny November. During the course of it there occurred no fewer than six changes, either from cold to warm, or warm to cold weather, the night temperatures being especially variable. On twenty nights (including below the freezing-point were registered by the exposed thermometer, and by the oldest of these the first frost were indicated by it—the greatest cold experienced here in November for eleven years. The ground also remained unusually cold. The rainfall proved extremely light indeed—lighter than in any November since 1876, or for more than twenty years. The great part of the month, no measurable quantity of rain-water came through the bare soil percolation-gauge. The sun shone on an average for 2 1/2 hours a

day, which is a splendid record for November. There were some windy days, but on the whole this was a calm month. The air, besides being, as a rule, calm, was also singularly dry. Since the winter half of the drainage year began in October, the rainfall has come short of the mean for the past two months by nearly inches, which is equivalent to a loss of 13 1/2 gallons of rain-water on each square yard of surface in this district.

THE AUTUMN

September and October were both moderately warm months, but November was so cold that the mean temperature of the season comes out exactly average. All the three months were dry—in fact, the total rainfall was less than half the mean for the quarter. The record of sunshine was about reasonable. E. M., B. & Co., London, December 3, 1901.

ENQUIRY.

The Rev. Canon Ellacombe, Biton Vicarage, Bristol, writes: "I should much like to know if Ebenus cretica and the single and double Saxifraga virginica are in cultivation. I have had them both, but have not seen either for many years."

ANSWERS TO CORRESPONDENTS.

A PLANT FENCE: P. K. You must not plant so near your neighbour's land as to shut out light to any appreciable extent from existing building or buildings. This would more especially apply to trees of considerable height. Shrubs, if kept to 8 or 10 feet in height, are not likely to form an objectionable fence, unless you allow their branches to extend over the boundary line.

BOOKS: W. Hoon. The Journal of the Royal Horticultural Society is published at various times, and is issued to the Fellows gratis. To others it is sold at varying prices, according to size. You should apply to the Secretary, 117, Victoria Street, Westminster, for further particulars. The Botanical Magazine is published in monthly parts by Lovell, Reeve & Co., 6, Henrietta Street, Covent Garden, London, W.C.; price 3s. 6d. coloured, and 2s. 6d. plain.—A. Parry. Apply to Mr. J. Douglas, Edenside, Great Bookham, Surrey, for his Manual on the Carnation.—H. H. My Gardener, by H. W. Ward, late of Longford Castle Gardens. (London: Pyre & Spottiswoode, East Harding Street, E.C.)

G. H. B. There is no book specially devoted to the treatment of plants for sale purposes. You had far better take service for a year or two in some market plant nurseries, which would be of more value than any book you could study. The new edition of the Gardeners' Dictionary of Gardening is a useful book, published by Upcott Gill, 170, Strand, London, W.C.

HARVEST-BUGS IN GRASS: J. D. C. These acrids are not specially troublesome on Lolium perenne, and we should suppose that a dressing of blood-manure (dry), or nitrate of soda afforded early in April, and again six weeks later, would have the effect of driving them away.

* * * NAMES OF FRUITS AND PLANTS, SPECIAL NOTICE: We are desirous of assisting young gardeners and our subscribers as far as we can do so consistently with our editorial duties, but our readers must kindly remember that such work is outside our scope, and always involves some inconvenience, and generally a large expenditure both of time and money on our part. Delay is unavoidable. Not more than six specimens should be sent. Correspondents not answered in this issue are requested to be so good as to consult the following numbers.

NAMES OF FRUITS: F. J. R. We are unable to say for certain that the answer printed under initials "F. G. R." was intended for you, but it is very probable that it was so intended.—Logan. Thanks for the samples of wood, and the particulars respecting the

habit of the trees. No. 1 you have under its correct name, i.e., King of the Pippins; but it is not the Apple generally grown in England under that name, which is the Golden Winter Pearmain. The other Apple, No. 2, which you have as Autumn Pearmain, appears to be the Winter Pearmain. Autumn Pearmain is synonymous with Summer Pearmain, an earlier Apple than that you sent. Your specimen is not so highly coloured as the Winter Pearmain usually is in the southern counties of England, but climatal differences would account for this.—J. F. We should be glad to oblige you if possible, but both Pears reached us in a state of pulp.—D. B. The specimens were most carefully packed, but the Pears were not advanced for satisfactory examination. 1, Bourré Superfin; 2, De Marais; 3, Nourvean; 4, Scarlet Tilling; 5, Yellow Ingestre.—Herbarium. 1, Summer Pearmain; 2, Cellini.—G. C. The Pear is Bourré Delfosse, and the Apple is Court Pendu Plat.—U. F. E. The Pears are much over-ripe.

NAMES OF PLANTS: Landes. 1, Scleranthus annuus; 2, Corrigiola littoralis; 3, Illecebrum verticillatum; 4, Inula Conyza.—I. F. W., Lichfield. Cuspalpinia pulcherrima.—J. H., Inverurie. 1, Zygopetalum Mackay; 2, Miltonia Clowesi; 3, Fittonia Pearcei; 4, F. argyrea; 5, Tradescantia zebra tricolor; 6, Opismenus Burmanni variegatus.—E. M. C. Cattleya elegans, often called Cattleya Alexandra.—Desirous. 1 and 2, Juniperus (next week); 3, Abies excelsa var. Clanbrassiliana; 4, Cephalotaxa pedunculata var.; 5, Eucyonium europæum (Spindle-tree).—R. W. Gnaphalium; but material insufficient to determine the species.

RETARDING LILY OF THE VALLEY, LILUM LONGIFLORUM, &c.: W. R. A. There is no special packing required. The Lily of the Valley crowns may be put into shallow boxes, and neatly covered with cocoanut-fibre. Bulbs of L. longiflorum may be treated similarly, covering them with the fibre. Different growers keep the bulbs at varying degrees of cold, but all of them have the air of the chamber below freezing-point. See Gard. Chron., November 3, 1900, p. 324.

SHOWING OTHER PERSONS' PRODUCTIONS AS ONE'S OWN: Fairplay. It is a most dishonest action if the products are shown for prizes; and most societies put into their regulations a notice to the effect that so doing will disqualify the exhibitor.

VIOLET FOLIAGE DISFIGURED: H. The leaves seem to have suffered from a plague of red-spider, although no living specimens were found. You might try the special form of Nicotine-vapour, sold by the N.-A.L. people, for the destruction of red-spider. The plants should have been rendered clean whilst still out-of-doors.

VIOLETS: H. Woodlice will devour almost anything, why not the flowers of Violets? You should trap them in pots filled with damp hay placed where they abound, emptying the pots into a pail of hot water in the morning after sunrise.

WALNUTS FOR EXPOSED SITUATIONS: Allée. Le Noyer Tardive and de la Saint-Jean. These are both good varieties to plant in exposed situations, as the growth and flowering are late, and thus less likely to be injured by spring frosts. The variety Mayette is also a late one. See French lists.

COMMUNICATIONS RECEIVED.—Vilmorin, Andrieux & Co.—W. W.—F. W.—B. W.—S. W.—E. H. R.—F. G.—Paris—E. M.—W. M.—E. T. Grahamstown—May L. Boden-Baden—W. C. W.—Rustius, apply to Messrs. Jas. Veitch & Sons, Chelsea—F. P. H.—J. Dornell-Smith, Edinboro—B. Level—D. F. G.—W. L.—H. S. Bradford—Admitt & Nantoin—J. J. W.—W. H. Massie, Edinburgh—J. D. T. L. Athlog—H. C. T. C. W. & Sons—B. L. O. S.—H. W.—E. W. R.—J. D. G.—Paris—J. O. B.—J. M. A. M. G.—E. B.—W. R.—W. C. H. E. H. J.—E. M.—Dr B. H. W. W.—J. D. G.—E. H.—W. F. B.—G. W.—F. T. M.—J. C. C.—S. A.—J. S.—H. T. M.—H. M.—Rev. D. W. M.—J. W. Miles—J. C.—Bob.

(For Markets, see p. viii.)



SOLANUM CRISPUM IN MESSRS. GAYNELLE'S NURSERY, KEDDIEH

THE Gardeners' Chronicle

No. 751.—SATURDAY, DEC. 14, 1901.

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GARDEN ANNUALS.

THE approach of a new year has now for a long period been signalled by the appearance of the various useful publications known as Garden Annuals. The fact that they appear with the regularity of clockwork, and have continued to do so for over a quarter of a century, is a sufficient proof that they have their place in the gardener's library, just as *Whittaker's Almanack* is indispensable to all those who are at all concerned with the larger affairs of life. As in the case of *Whittaker*, it is possible that Garden Annuals differ from year to year in a greater degree than is at once apparent.

We have recently been turning over the leaves of one of the earliest of these Garden Annuals, *The Florists' and Amateurs' Annual, and Gardener's Directory for 1810*, edited by George Glenny, and published at the office of the *Gardener's Gazette*, 343, Strand, and there are many points of considerable interest about this volume, which has now become scarce. It appeared at a time when everything in connection with the garden was costly—except, perhaps, labour;

and the price at which it was published, 12s. for the ordinary edition, constituted it a luxury for employers rather than for working gardeners. Mr. Glenny, the editor, was a man of considerable industry, but his method of arrangement was not of the best. Much of the material in this Annual appeared elsewhere, and probably only two or three of the coloured plates were prepared expressly for this work. One of Mr. Glenny's most brilliant ideas was to press into his service *in the Post Office Directory*, with which he has filled twelve pages. The penny postage, one of the greatest incentives to English commerce ever introduced, had only just come into effect, and was then strictly limited to 1d. per half-ounce within the limits of the United Kingdom. The postage of a letter to France was still 10d., and to India *à la Marseilles & S^d*. Such things as letters to Australia and New Zealand do not appear to have been contemplated as possible by the Post Office, for those places are not even mentioned in the list.

From our point of view, quite the most interesting of the many "lists" in this Annual is that of "the nurserymen, seedmen, and florists of Great Britain and Ireland." This list is "greatly corrected since it appeared in the *Gardener's Gazette*," although admittedly "still very imperfect." Ninety-five per cent. of the names in the London list have passed into the limbo of the forgotten. A few still remain, as, for instance, James Carter, at 238, High Holborn; Low & Co., of Clapton; and Jacob Wrench & Son, of King William Street, London Bridge. Protheroe & Morris, of Leytonstone, were the founders of the widely-known firm of horticultural auctioneers, of Cheapside. Among provincial nurserymen and seedsmen, we notice M. Waterer, at Knapp Hill, Bagshot; F. & J. Dickson, at Chester; Veitch & Sons and Loeube & Pine, at Exeter; J. Pearson, at Nottingham; Mr. Fox, at Enzance; Messrs. Sutton & Sons, at Reading; Thomas Rivers, Jun., at Sawbridgeworth; at Plymouth, Pontey (now Mr. E. Wilson Sarpoll); and so forth. Although Mr. Glenny's aim in compiling this list was purely utilitarian, it has now, sixty odd years after its compilation, a very valuable interest to those who have a liking for the ancient by-paths of gardening.

In a book of this kind, separated as it is from to-day by the most remarkable half a century progress in the history of the world, the advertisements are far more interesting than the text. Mr. Glenny appears to have been supported by the trade, but out of his patrons only three appear to have survived the vicissitudes of time. Messrs. Hugh Low & Co., T. Rivers, Jun., and J. Weeks & Co., the hothouse builders; many of the others are probably even now well remembered, for they must have been in business long after the Annual appeared, as, for instance, Messrs. Forrest & Black, successors to W. Malcom & Co., at Kensington, at that time one of the most extensive houses in the trade. The senior partner, Richard Forrest, had a large practice as a landscape gardener, his works including extensive alterations at Syon House, at Eaton Hall, and many other private places; whilst his public designs included the Great Western Cemetery of London, Zoological Gardens at Bristol, Cheltenham, and Manchester, and so forth.

The advertisements include one of John Salter, "horticulteur," of the Avenue de Picardy, Versailles, France, who made a specialty of Chrysanthemums; and one of M. de Cachet, at Angers, whose chief line was Camellias, which varied from 2 to 60 francs per plant. One curious feature about these advertisements, which are bound together and numbered consecutively at the end of the volume, is that they are frequently illustrated with charming coloured plates, drawn by J. Wakeling and engraved by E. S. Weddell. The cost of these plates was apparently defrayed by the advertiser opposite whose list they appeared. With one exception they are all Dahlias. The advertisement of John Pamplin & Son, of the Paradise Nursery, Hornsey Road, Islington, contains plates of two new Dahlias; and the same number is attached to the advertisement of Messrs. Hugh Low & Co. The one exception is the "Duke of Wellington" Tulip, which "broke from a seedling breeder by J. Goldham, Esq., 1838;" this plate had, however, been previously used in the *Horticultural Journal*, where indeed nearly all the coloured plates which appear in the body of the Annual had already been published.

The prevailing "sentiment," if one may so describe it, of this Annual, is distinctly that pertaining to "florist's flowers," which at that period formed a very large part in garden matters. They appealed to the *hoi polloi*, and were for many years popular, to the exclusion of so many other beautiful denizens of our gardens. The exact definition of a perfect Pansy or a perfect Dahlia was considered as of far greater importance than the discovery of a new *Orchid! Mais, nous avons changé tout cela, W. Oehrlé.*

NEW OR NOTEWORTHY PLANTS.

STAPELIA ATROSANGUINEA, N. E. Brown.

THE very distinct and some-what remarkable plant here described was discovered by Capt. E. J. Lugard in the Northern Kalahari Desert in January, 1899, and was received at Kew in the following month. The plant itself, when not in flower, has stems exceedingly like those of *Hemerocallis decipiens*, N. E. Br., and might easily be mistaken for that plant, but the flowers are utterly different, being quite unlike those of any other of the tribe *Stapeliaceæ* known to me, and are of a particularly rich and intense blackish-crimson (not purple-brown as is so usual in this group), which contrasts very effectively with the light colour of the corona. The plant is very apt to rot suddenly if too much water be given to it in the winter season; indeed, it should have very little water then.

Plant tufted, branching at the base, about 3 inches high, or, according to Capt. Lugard, growing to 6 inches high; stems 2 to 3 inches long, erect or ascending, decumbent at the base, 5 to 6 in. thick, four-angled, greyish-green, marbled with brownish-purple, glabrous; angles obtuse, toothed; teeth 1½ to 3 lin. long, stout, conical, tipped with a subulate, acute, quickly withering rudimentary leaf, having two minute teeth at its base. Cymes sessile at about the middle of the younger stems, progressively two to three (or more?) flowered. Bracts 1½ to 2 lin. long, subulate, glabrous. Pedicels 2½ to 3 lin. long, stout, glabrous. Sepals 1 to 1½ lin. long, 1 lin. broad, lanceolate, acuminate, spreading. Corolla

about 1 inch in diam., quite glabrous and not ciliate, greyish-green, mottled with purplish outside, and of a rich deep blackish-rose, without spots or markings within; tube $3\frac{1}{2}$ lin. long, and about 7 lin. in diam., measured outside, campanulate; lobes $\frac{3}{4}$ in. long, $\frac{1}{2}$ in. broad, ovate, very acute, tipped with a short mucro, very spreading, slightly revolute along the margins, excavated at the mouth of the tube opposite the lobes of the outer corona, very slightly rugulose, and very minutely papillate on the inner face, so as to give it a velvety surface to the eye. Outer coronal-lobes arising $\frac{1}{2}$ lin. above the base of the staminal-column, horizontally spreading, about 1 lin. long and broad, deltoid-ovate, shortly bifid at the apex, longitudinally folded, forming a concave channel in which nectar is secreted; dull orange-yellow, reddish in the channel. Inner coronal-lobes 5 lin. long, linear-terete, obtuse, incumbent at their base on the backs of the anthers, then divergent, ochreous at the base, passing into pale sienna above, whitish at the tips. *N. E. Brown.*

STANHOPEA LANGLASSÉANA, Cogniaux,
*Nov. Spec.**

Among the living plants sent from Colombia some years ago by the late M. Langlассé to M. Marc Micheli, at Geneva, there was a Stanhopea that flowered last July for the first time in the houses of the Château du Crest. M. Micheli, finding that the flowers were different from those of all other species known to him, sent me an inflorescence, but (as is well known) Stanhopea blossoms being extremely fragile, they were absolutely unrecognisable on arrival. The same plant flowered again about the middle of last November, and this time, selecting half-opened flowers, M. Micheli forwarded an inflorescence to me, which arrived in perfect condition.

The blooms have a very distinct appearance; the comparatively small lip is erect, rigid, and closely pressed against the column, which is also erect; the petals also are ascending, and pressed against the column, while the sepals are extended horizontally. The shape of the lip is also remarkable; the hypochile is short, rather broader than long, very shining, in form a flattened sphere without appendages or any projections; the epichile is almost square, the top much inrolled, and it bears on the back, by the inrolled part, a large projection in the form of a blunted tooth.

The pseudo-bulbs are from 4 to 5 cm. long by 2 cm. in thickness. Leaves deep green, 30 to 40 cm. long by 12 to 11 cm. wide, ending

at the base in a petiole 5 to 7 cm. long. Sepals and petals yellowish-white, slightly tinged with rose, with some small spots of purplish-brown near the base. The length of the dorsal sepal is 70 mm., that of the lateral sepals 65 mm., and that of the petals is 55 mm. Length of lip 1 cm.; a waxy-white colour, except the epichile, which is citron-yellow. Column 4 cm. long, white, lightly tinged with rosy-yellow.

At the request of M. Micheli, I name this species in memory of the courageous and unfortunate collector Langlассé, who found it in September, 1899, on a mountain to the S.E.

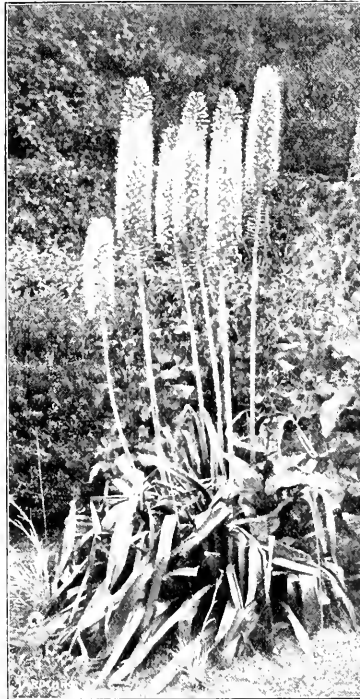


FIG. 127.—*EREMULUS ROBUSTUS*.

of Altaquezo, in the valley of the Rio Mira, at about 1,700 m. altitude. M. Micheli received only one large plant, which he divided into four. The plant is very floriferous, the clump which flowered bore eight leaves and five inflorescences. *A. Cogniaux.*

ORCHID NOTES AND GLEANINGS.

"LUNDENIA."

The November number of this periodical contains illustrations of some very remarkable plants, as may be judged by the following brief notes:—

CYPRIPEDIUM LONERIANUM, L. 756.—A hybrid raised at Mount Teck between *C. Victoriae* Maria and *C. Lee* autumn. It is a very handsome form; the standard resembles that of *C. Leeanum*; the undulate petals suggest those of *C. Chamberlainianum*; the lip is elongated, shining, and purplish red in colour.

LEPIDOCATTLEYA = *ALPESIANA*, L. 754.—A hybrid between *Ledia purpurata*, and *Cattleya Schelliana*. Segments spreading, rose lilac; lip 3-lobed, undulate, outer or lobe purple, with a narrow, white edge.

LAST YEAR I RECEIVED FROM THE REV. F. T. MOTT, of the *Journal de la Société Nationale d'Horticulture de France*, 1901, p. 77.—Remarkable for its

spreading segments, thickly bestrewn with small lilac spots; lip smaller than the segments; 3-lobed, yellow with purple spots.

SARCOPHYLLUS UNGUICULATUS, L. 756.—The flowers of this beautiful species are borne in pendulous racemes. Each flower is about 2½ inches across, with narrow, lanceolate, white segments, and a 3-lobed lip smaller than the segments; the lateral lobes striped with violet, the anterior lobe yellow, with red stripes. It is a native of the Malayan Islands.

EREMURUS.

M. MOTTET contributed to the Horticultural Congress of Paris, May, 1901, a valuable monograph of this genus, in which he gathers up the information supplied by his predecessors, and adds the result of his own observations. The length of the stamens, the position of the pedicels, the colour of the flowers, being characters easily recognisable in the living plant, are those to which M. Mottet attaches the greatest importance. M. Mottet groups the species as follows:—

SECTION I.—*AMMOLIRION*.

Outer perianth-segments with 3–5 nerves, stamens one to three times longer than the segments; pedicels erect.

SECTION II.—*HENSINGIA*.

Petianth-segments all 4-nerved; stamens as long as or sometimes longer than the segments; pedicels spreading or ascending.

AMMOLIRION.

Capsule appressed to the axis, valves wrinkled.

Flowers yellow *E. spectabilis*,
" white *auricula*,
" purple *turkestanicus*.

Capsule erect; valves smooth.

Pedicels not jointed.

Flowers white *E. uldericensis*,
" yellow *bachtariensis*.

Pedicels jointed.

Flowers white *Cappadociensis strophyllus*,
" yellow *albicans*.

HENSINGIA.

Stamens shorter than the segments.

Pedicels ascending.

Flowers white *anisopteris*,
" yellow *luteus*,
" rose *Alberti*, *Altkissoni*.

Pedicels spreading.

Flowers white *Bachtariensis*, *persicus*,
" yellow *Sonorovi*.

Stamens as long as the segments.

Pedicels ascending.

Flowers white *pareiflorus*,
" white and yellow *albo citrinus*,
" yellow *albus*.

Pedicels spreading.

Flowers white *himatensis*,
Griffithi,
Stoelsii,
angustifolius.

" rose *robustus* (fig. 127)

Eberardi (fig. 128),
alba.

" yellow *Korolkovi*,
Kaunmanni,
Capsuli,
Bengel,
aurantiensis.

Stamens longer than the divisions.

The species are then fully described, and their appropriate cultivation detailed. M. Mottet recommends that the plants be covered with a mulch in winter. The paper, which may serve as a model for similar productions, is printed in the *Journal de la Société Nationale d'Horticulture de France*, 1901, p. 804.

THE GARDEN AS A HOBBY.

IN the issue for July 18 last, Mr. F. T. Mott concludes his paper on "A Midland Garden" by saying, "Old men who retire from business, and have nothing to do but eat and sleep and read the papers, die off rapidly. They should take to gardening, and do part of the actual work themselves." I do not think there are many notions more erroneous than this. One might just as well expect an old man, after retiring from business, or any of the services,

to take to astronomy, or to mathematics, or to learning Chinese, or the Cuneiform language, if he had no training in any of them before. Unless the old man, as a child and youth, has taken an interest in flowers, plants, and gardening, he will, as a rule, find gardening, when he retires from business, one of the most wearisome of occupations. If he is wealthy, he will probably have a garden and a gardener, and he may take his friends round to inspect the successes of his gardening. As for doing anything himself with intelligence, beyond perhaps plucking a Rose now and

on his brain—convolutions which will interest him throughout life, and will become a delightful stand-by when he becomes old, and retires from business. But under such circumstances he will probably have become a professional or an amateur gardener long before he becomes old. If he should have inherited some of his mother's love of plants in addition to his early training, he will find in after life that he has reached an earthly paradise—for the fascinations of hybridisation alone, and the creation of new forms, are endless.

gardening, and allotted each of them a separate bit of ground to make their own little gardens; and taught them, or tried to teach them, what to plant, and what to do. Some would not take to it at all; others took to it at first, but eventually looked upon it as dull amusement, and gave it up; while a minority who had it in them, stuck to it and enjoyed it, and let us hope returned to it after retiring from business.

Even Mr. Mott himself, in the conclusion of his paper *Gardeners' Chronicle*, August 10, 1901, p. 105, says, "Gardening is an art full of complex details, and cannot be satisfactorily taught by books alone. Experience and practice are necessary to every gardener. Even old experts are continually confronted with cases in which experience fails, and the right course must be guessed at." Which would seem to mean that the gardener, like the poet, *nascitur non fit*.

In the *Spectator* of August 3, 1901, p. 156, there is a review of Miss Gertrude Jekyll's "Wall and Water Gardens." The reviewer concludes thus: "No one can read it without realising that Eden is not wholly a thing of the past, and that God's call to tend a garden is the happiest, as well as the oldest, let which can fall to man."

But the foundation of that "call" must be laid during childhood and youth, if at all, for gardening is an art, and like all arts, cannot be taken up the moment one retires from business. That man and that woman will be lucky if they have had the love of plants, and the principles of gardening stored in their brain while they were young, for the end of their lives may become not only happy, but also interesting.

One old gentleman, a neighbour of mine, retired from business, came to see me one day. I showed him a fine plant of *Datura Knightii*, in flower. He astonished me with the following remark: "Has that anything to with the 'Date-tree'?" He was by no means endeavouring to make a pun, but he put the question in all seriousness. It was plain he had not been taught gardening in his youth; and probably he has never opened a book on either gardening or botany in his life. Gardening to such a person would be a very wearisome process.

In the *Windsor* for September, Sir Thomas Lipton is reported to have said: "Gardening, I agree with Lord Temnyson, in thinking the most perfect of recreations; it gives you just enough to think about to be a complete distraction, yet not enough to worry you; and it is work-play done under delightful conditions. The hour in the garden at the beginning of the day, or at its close, is worthy many sacrifices in the winning."

Sir Thomas Lipton has evidently not had much to do with garden pests, otherwise he would have had worries enough; all those are dealt with by his gardeners. One hour morning or evening may be enough to look at one's Orchids; but then Sir Thomas has not yet retired from business. *E. Bonavia, M.D.*

PERENNIAL ASTERS.

(Continued from p. 412.)

THE A. NOVI-BELGI GROUP. This is the most extensive and variable group we have, and though some of the varieties are so widely distinct, they are connected by intermediate forms, so that it becomes difficult to divide them up; and another difficulty is that the same varieties occur under several different names, but I will refer to a few of the best and most distinct under what I believe to be the most



FIG. 128.—ERMIUS ELMESIANUS, FROM THE GARDEN OF M. MARC MICHEL, NEAR GENEVA. (SEL. P. 125.)

then and pricking his fingers, it is not to be expected. Gardening is undoubtedly one of the most charming outdoor occupations for old age; but the enthusiasm for the art must have been founded in childhood and youth.

The best way for a gardener to begin is to have a mother fond of gardening, with a patience and perseverance to intelligently tend her plant pots. Then the child holding her skirt will go about with her while she sows, pots, weeds, and affords water. He will then naturally watch what she does, will ask many questions, and learn much, not only about seeds that grow and bring forth flowers, but also a great deal about slugs, snails, earwigs, woodlice, green-fly, and other insect pests. All these things will be quite fascinating to the child, and will leave a record

I have seen numbers of bald-headed and grey-headed men passing weary hours, day after day, in a London club. A friend once said of them, "All these creatures seem to be waiting for death!" Truly, a most enjoyable occupation! I think parents incur a great responsibility in not teaching their children, or getting them taught, the love of plants, and the ways of managing them, in their younger days, as a stand-by for their old age, when they join the great corps of "men out of employment." Usually there is nothing a child enjoys more than having a little garden of its own; although even in childhood the love of a little garden is not universal.

A lady friend tells me that she once had charge of several children of the same family, and that she tried hard to make them take to

correct names. Taking the white varieties, Perle Lyonnaise forms a dwarf, compact bush with pure white, medium-sized flowers; Isme and Madona are both dwarf and good of taller sorts; Beatrice, Purity, White Spray, and Candida, are most desirable; Calliope, mauve pink, large flowers; Robert Parker, pale blue; and R. Parker names a dwarfier variety, are good. Of deeper shades, Autumn Glory and Arcturus are the best; W. Marshall, soft mauve-blue, large flowers; Maid, azure-blue; and St. Patrick, an early variety of the same shade, are among the best. Of those with rose or red-tinted flowers, Village Maid, T. S. Ware, and the dwarf, compact longifolius formosus (or levigatus), are the most distinct; but we have not yet a good red in this class. Of those with a deeper shade of purple, formosissimus, floribundus, and superbus are the best. The above are only a few of this section; there are many others worthy of note.

PANICULATES GROUP.

In these we have rather a distinct type; the stems and branches are covered with small leaves, and as the name implies, the flowers are produced in large branching panicles. Blandus is one of the best varieties, forming a dense bush covered with rather small white flowers, which change to bluish with age. W. J. Grant is a most distinct variety; the numerous starry flowers have a rosy disc and bluish ray-florets, produced on slender branching racemes. Taxus and Dot are other good varieties of this section; and Mrs. G. W. Earle, which is usually included with the Novi-Belgii group, is closely allied to the above. The flowers are larger, pure white, with a bright yellow disc. Lanceolatus is another that may be included in this group; it is one of the latest flowering of those with starry white flowers.

PUNICEUS GROUP.

These are among the earliest to flower. The type is very dwarf, with soft foliage and fleshy stems; the large pale lavender flowers are produced in dense terminal corymbs. Puniceus lucidulus grows taller; the large silvery-mauve flowers are produced on nearly horizontal spreading branches. Pulcherrimus, this grows more pyramidal, with tall, branching flower-stems; the flowers are a soft silvery-grey, and rather closely set on the long, lateral branches.

Versicolor.—In this the flowers open white, and change to quite a rosy-purple tint. *Versicolor* Themis grows about 1 feet, and flowers early. The dwarf variety "Nanus" differs only in being quite a miniature form of the above.

DISTINCT SPECIES.

There are several quite distinct species of which we do not appear to have any garden varieties at present. Of these the most worthy of note are:—

Corymbosus.—Large, broad, basal leaves, and short spreading corymbs of small starry-white flowers.

Mucrophyllus.—Loose branching flower-stems, and medium-sized, pale mauve flowers; the basal leaves are large and spreading.

Trinervis.—Soft woolly leaves, serrated, with terminal branching corymbs of medium-sized, pale mauve flowers.

Anchytisus.—Rather tall growing, with long loose racemes of small amethyst-blue flowers. This also occurs under the name oblongifolius.

Duninosus.—Very dwarf, with a dense mass of small bluish-mauve flowers.

Thomsoni.—Somewhat resembling *Amellus*, but has distinct woolly leaves, and large pale mauve-blue flowers.

Umbellatus.—A very distinct species, with tall branching umbels of greenish-white flowers.

Douglasii.—In this the bright purple flowers are destitute of ray-florets; the ovate leaves are serrated, continue up the flower-stems, and are quite distinct from the ordinary *Asters*.

Veronia warborencensis is the most correct name for this.

Linosyris.—Dense terminal corymbs of bright yellow flowers, which are also destitute of ray-florets, and often found under *Chrysocoma linosyris*.

Grandiflorus.—Very distinct, with small stem-leaves, and large blue-purple flowers. This is one of the latest to flower. *J. Hensley*.

CHOICE FERNS.

PTERIS TREMICLA.—It is quite unnecessary to say much of the ordinary type, for it is one of the best known and most useful of all Ferns; but there are several very distinct varieties of it which are not well known, and even in the plants grown under the ordinary typical name there is considerable variation, some having broad, nearly triangular fronds, with broad pinnales, and others with long, rather narrow fronds and narrow pinnales; beside other intermediate forms. Of the distinct varieties worthy of notice are:—

P. tremula flavida, a plant with rather long, erect fronds, having a bright surface; the pinna narrower than in the ordinary type, and the ultimate segments twisted and much elongate, and the fronds occasionally terminating in a slight, branching crest. When grown on freely this variety makes a graceful plant.

P. tremula grandiceps, one of the earliest of the crested forms, is not often seen now. In this the fronds terminate in a heavy, branching crest, and the side pinnae in a light branching one.

P. tremula elegans has a more spreading habit, and the fronds terminate in a wide, branching tuft of multifid growths. It is only when these varieties are grown freely from spores that their characters are seen to advantage, and unfortunately it is rarely that they are raised in this manner.

P. tremula Smithiana is another distinct variety which is of erect growth, the fronds much branched, and forming several frondlets from the base, each terminating in a branching crest. When this variety was first put into commerce it was thought that it would make a valuable market fern, but it has proved too brittle, and the terminal crests continue to grow and are very tender. It makes a splendid specimen, and is worthy of a place in any collection.

P. tremula variegata.—This first originated among a batch of seedlings of *Pteris Victoria*, and it is remarkable that the same variety occurred in several widely-divided localities in England, and the variety was also raised on the Continent and in America, but though it appears to produce fertile fronds, I have never known of a batch of seedlings being raised. Of all the plants I have known having come among *P. Victoria*, *Smithiana* is the only one which can be depended upon to reproduce itself from spores with any degree of certainty, though I have occasionally known *elegans* come fairly true from spores.

All the varieties of *P. tremula* should be potted in a good leamy compost, to which may be added some manure, but it is quite un-

necessary to use peat. During the summer they will grow freely in an unheated pit, but to keep them growing through the winter the temperature should not fall below 50° Fahr. *A. Hensley*.

TREES AND SHRUBS.

JUNIPERUS PROCUMBENS.

IN extensive rock-gardens this Conifer will be found of value for covering slopes or knolls, or for placing behind large stones to grow and hang over them. It has a spreading habit, covers a yard or more of surface, and grows only a few inches in height. When established and draping an elevated rock with its numerous branches, the tips of which point upwards, this Juniper is very effective. An open, sunny position and rather light soil seems to best suit its requirements. Also known under the names of *J. prostrata* and *J. repens*.

JUNIPERUS SABINA, KNAP HILL VARIETY.

The Savin Junipers are amongst the most useful of dwarf Conifers, and always attract attention by reason of their spreading, irregular habit of growth. The variety above mentioned is a stronger-growing plant than the type, and forms a handsome specimen in less time. It is well adapted for planting on bold rockwork, either for a background, or on different levels, where large boulders are used, and there is plenty of room, both for the roots and branches. Sloping banks are also suitable positions, or groups may be arranged with good effect in front of or between trees of *Cedrus Deodara*, *Pines*, *Abies*, &c.

When the plants are received from the nursery, they may be planted at about 1 feet apart for two years, then be lifted and planted at wider distances, or put into positions where they will remain. If grouped, a space of quite 15 feet should be allowed, and plants of the Knap Hill Savin will then touch each other in a few years, if the soil and situation are suitable. The height rarely exceeds 5 feet, consequently views and taller trees are not hidden. The habit is spreading and picturesque, the branches being naturally arranged so that each plant is somewhat hollowed in the centre. *J. G.*

SOUTH AFRICA.

FORESTRY.

As an old correspondent, I take leave to bring to the notice of your readers two subjects of the first importance to this country which I have long worked at, written about, studied, and pondered over—I mean forestry and fruit-culture. Of both, the prospects in this country will be of the brightest, when once the war is over.

I wish to invite help from your readers, who are world-wide, in bringing these two subjects before the public. Alone, a man can do little; but in conjunction with like natures, a great deal may be accomplished. An American authority on Strawberry-growing says: "In the first place, I should give them water; in the second place, more water; and in the third place, I should give still a little more water." So in regard to the promotion of forestry and fruit-culture in this country, we must firstly, secondly, thirdly, hammer facts into the public, before the great British public will rouse itself.

Twenty years ago, I used to write to the Natal papers, advocating extensive tree-

planting; and since those far-off days a distinct advance has been made. The great point in growing timber on the high veld—which for our present object we may define as the country lying a hundred miles from Johannesburg as a centre—is to recognise that wood may be grown as a paying crop on land which is worthless for farm crops. Our rainfall is adequate.

FRUIT-GROWING.

Much might be also said on the subject of fruit-growing, in which for many years we have taken a lively interest. How much longer shall we submit to pay sixpence each for Tasmanian Apples, and consume Californian Peaches, Melbourne jams, and American Peaches and Pears? In a small model orchard

A NOVEL AVENUE.

The devices found in gardens to avoid monotony, form new combinations of plants, trees, shrubs, and green sward, combined with statuary, terraces of stone or brick, &c., or without these adjuncts, are manifold. Shady avenues, formed with umbrageous trees, with the common Yew, Cedar, Douglas Fir, with *Sequoia gigantea* and *S. sempervirens*, *Thuja* and *Cupressus*, are not uncommon, and provided the species of trees with which the avenue is formed, makes equal and regular growth, the effects are usually pleasing, whether on level or ascending ground.

The subject of our illustration (fig. 129), found in Sir Wheatman Pearson's garden at Paddockhurst, Sussex, differs entirely from

Forestry" and university lectures are necessary in order to fit men as foresters for British woodlands. Advocates of a better system of forestry in this country have been preaching when they might have been working. We want at the present time one or more—

"FORESTRY ORGANS."

Give me a *Foresters' Chronicle*, or a *Gardeners' and Foresters' Chronicle*, like the *Gardeners' Chronicle*, teaching right practice; place it in the hands of owners of woods and foresters, cultivate an interest in the business, and I would undertake to lift forestry to a higher plane of successful practice almost at once without any other aid. What the horticultural papers and writers have

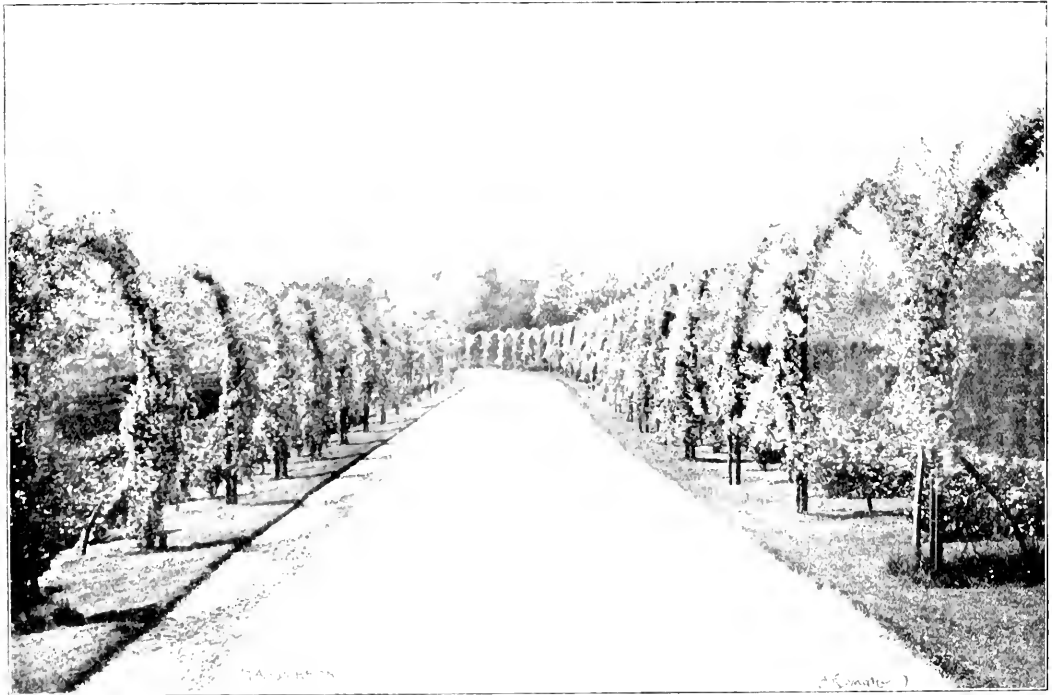


FIG. 129.—AVENUE OF PYRUS MALUS FLORIBUNDA AND P. M. BACATA AT PADDOCKHURST, NEAR THREE BRIDGES.

established in this Park just before the war, on unirrigated land, remember, I have capital Grapes, Plums, Peaches, Apples, Apricots, Figs, and Nectarines promising a fine crop.

There is nothing special in our soil here; there are millions of acres just as good in the country. On the close of the war, when this much-enduring country will begin to work again, there will be thousands of poor Dutch who will be absolutely destitute. Could not a State Forestry Department take some of these in hand, and teach them how to draw the potential wealth from the soil—which has been so dearly paid for—in the shape of timber or fruit? More wonderful than all the gold of the Rand is the wealth in the soil still lying untouched by human hand. R. W. Adlam, *Caretaker, Jomber Park, Johannesburg.*

any of these, consisting as it does of two species of Crab, of erect habit of growth, which, to make them conform to the shape of an arch, must be forcibly bent when young, and pruned severely, after the manner of a cordon fruit-tree. The species planted are *Pyrus Malus floribunda* and *P. M. bacata*, beautiful in bloom, and not unpleasing when loaded with fruits in the autumn. The arches are 12 ft. in width and 9 ft. in height.

FORESTRY.

THE REQUIREMENTS OF FORESTRY.

From what has been written lately we seem to be coming round to a realisation of the fact that something besides a "Chair of

done for gardening can be done for forestry. British gardening is as far, or farther, advanced than is German forestry in its own line with all its schools and colleges which British gardeners have had to do without. The latter might perhaps have been still further advanced had they had schools in which to learn their business methodically, but I am taking things as they stand.

There are books on forestry, but up till lately British writers have taught wrong practices, and their books are too dear, but through no fault of the writers. I know some of the best authors of gardening and forestry books have been handicapped by publishers. My advice to those who want to write a book is, put a price on it that will pay, or put it into the fire. Be that as it may, my experience

among foresters on many estates all over the kingdom is, that they have few books, and no periodicals such as gardeners have in abundance. I have often been asked by owners of woods how it was that so many weekly papers were devoted to horticulture and agriculture, not to mention heaps of articles in newspapers, and not a scrap, comparatively, given to forestry. Calendars on every separate branch of gardening are published, and although a calendar on forestry would be thankfully received on many estates, there are none. To do it justice, the *Gardeners' Chronicle* has given more space to forestry than any other paper, but more is wanted. The *Gardeners' Chronicle* is very often supplied to gardeners by their employers, and it would be supplied to woodmen as well if it contained more about their business. I have been told so, at any rate, and often, by proprietors; and some foresters are supplied with the *Gardeners' Chronicle* now as being at least the best of its kind for them. A forestry calendar, about once a month or a fortnight, would, at the present-time transition state of forestry, be the best kind of instruction that could be supplied to owners of woods and their foresters; and if such a calendar was up-to-date, and made generally interesting as well as seasonable, the paper that published it would be read by owners of estates a good deal more than some horticultural papers are read now.

Wherever one goes to inspect woods, it is a question of work, and how and when to do it. A large portion of the present writer's time is spent in writing out what are practically calendars of operations for woods on private estates. What, however, is wanted for British woods is instruction based on the best and most modern ideas, and as far as possible adapted to the present condition of woods on private estates. It is of no use writing over the heads of either owners or their agents or foresters, and suggesting State schemes of forestry for diminutive areas.

Restoration of existing woods to the full-crop condition with the most valuable species is wanted almost everywhere. On the Continent, it is either all Beech, all Spruce, or all Scotch Fir, according to the region; but the English timber market demands a much greater variety. One wonders to see professionally gardening and woodland papers, pretending to be practical, and striving to be aesthetic, missing week by week a huge slice of the real work that a large section of their readers want to know most about. One has but to sign one's name to an article on forestry, or woods, and work in them, to bring more correspondence from owners than can sometimes be dealt with conveniently.

I may be wrong, but I have a firm conviction that there is a practically unexplored sphere of influence and good work at the present time open to any good rural paper that chooses to lay itself out for it in the direction of forestry. There are thousands of owners of estates who also own woods, and millions of money are involved, not to mention the interest taken in woods and trees for their own sake, whether planted for use or for ornament.

With regard to forestry education on what may be called "school" lines, what are wanted in this country, to qualify men at little expense for such posts they can find worth having, are not so much colleges, as stations on fairly well wooded estates or localities where qualified practical foresters could teach pupils theoretically and practically. There are well known estates at the present moment where the owners would be willing to lodge young foresters in comfort-

able bothies, like gardeners, to give them fair wages, and a forestry education under the forester, if capable foresters could be found for such posts—the men to work in the woods as gardeners work in private gardens. But foresters up-to-date and who can teach are difficult to find. They cannot be got from the agricultural colleges, as nearly the whole of the pupils there are gentlemen's sons, or youths who aspire to become land agents, and who, besides, have not been taught modern forestry.

In making enquiries lately for a forester, the only place where they could be met with seemed to be the forestry pupil classes at the Edinburgh Botanic Garden, where men willing to take Head Forester's places, at such wages as are going and who are practical men as well, may probably be found by and by, but even these classes are more theoretical than practical.

In other respects there are plenty of facilities for teaching foresters in every fairly well wooded district in England, and any one choosing to organise a class, who is able and willing to teach, might have access to all the woods within his reach for the asking. In almost all woods the right and wrong sorts and shapes and sizes of trees are to be seen, and the conditions that produce good and bad timber and remunerative crops could be seen and explained almost anywhere, and theory illustrated by practical examples.

And now a word about schemes for combining—

TIMBER AND GAME PRESERVES.

In the interesting lecture, from which you quoted in the *Gardeners' Chronicle* of March 9, it is suggested that "existing woods" on estates be left out of financial consideration altogether to "serve exclusively as game preserves"—additional woods to be everywhere created "and managed on economical principles for the production of timber." That is a proposal that means throwing timber crops far into the future, and presents insuperable difficulties. Woods are desired on every estate, and to give the woods up to game, as proposed, would frequently mean giving up timber crops altogether, for the simple reason that on many estates of moderate extent as much land is already devoted to woods as can be spared for the purpose, or because the land left is too good for planting. Only recently this subject came up on an estate where the woods are under 1,000 acres, and the rest of the estate is worth more than 10s. per acre rent for other purposes. The woods, which are thin and irregular like most English woods, though containing much fine timber, were recently valued, the owner said, at £30 an acre, or altogether at about £21,000, a low valuation compared to what it might be for properly stocked woods; but taking the woods at that figure, as an example, could a proprietor be expected to give them up exclusively to game, and start planting fresh areas? Here would be capital locked up and dead, worth over £1,000 per annum in income at 5 per cent. simple interest, and which would mean doubling, or more than doubling, the game account annually, an account that is never met.

The majority of estates are in this plight, and those who suggest such things, strangely misjudge the temper of British landowners, if they think they would adopt forestry plans of that kind. Even the Germans combine their forestry with game and sport, and why should not we do the same in this country? But there is another fatal objection. Who, that is familiar with game preservation in this country,

could be persuaded of the practicability of keeping either the game or the gamekeepers to the existing woods with the "additional woods" on the other side of the hedge may be? How are the pheasants, woodcocks, black game, &c., to be kept out of the "additional woods on surplus lands?" and who believes that the keepers and sportsmen would not follow them when they went there, as they would be sure to do? The proposal is simply impracticable. Many gentlemen are realising the importance of their woods nowadays, and are quite willing to fence against rabbits, and re-arrange existing woods, so as to combine forestry with a reasonable amount of sport; and on these lines the forester must set to work if much good is to be done in a country where all the woods are private property, and hardly two estates are alike.

At the present time on estates where game is extensively preserved, much timber is both grown and sold, adverse as the conditions are. This serves to show what might be accomplished with care and method if woods were properly laid out. Plenty of instances could be given of income from woods on sporting estates. In my own case I disposed of in the open market from two estates of moderate extent close upon £40,000 worth of timber in less than fourteen years, and I know my neighbours were going on at about the same rate in proportion to their woods; and all the time these estates provided ample sport for the gun. Almost the whole difficulty, from the sportsman's point of view, is the "putting up" of the birds, and seeing them when they rise in thick woods. This is the objection to dense woods, and it may be easily got over if owners would lay their woods out with open spaces and rides, and keep their timber trees in closer rank where they do grow. I was assured the other day by the owner of a large estate, and a thorough sportsman, that the above plan is quite practicable and excellent, as game is "driven" nowadays, and he is having his woods laid out in the way indicated. The most grievous mistake of all on sporting estates, however, is the extent to which almost worthless species like the common Spruce has been planted for covert, to the exclusion of valuable trees like the Larch, Ash, Oak, Sycamore, &c., pulling down the value enormously. Not a tenth of the evergreen covert is wanted in mixed woods that obstinate keepers imagine, and at whose suggestion, in times past, such covert has been planted, and through whose carelessness and neglect the good trees have been destroyed by rabbits. *J. Simpson.*

BOOK NOTICE.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES."

THE November issue of plates and descriptions of Orchids includes the commencement of four genera, viz., *Bulbophyllum*, *Bletia*, *Polystachya*, and *Schomburgkia*; and in the *Chronique Orchidéenne* M. Alfred Cogniaux gives particulars of recently-named new hybrids, an article on leaf-soil for Orchids, and other information.

Bletia hyperborea, R. Br.—A very old inhabitant of gardens, with purple and white flowers. It is a terrestrial Orchid, and it thrives outdoors on rockeries in sheltered situations, with a slight protection of dry leaves in winter.

Bulbophyllum Lobbiai var. *Nuttallii*, Cogn.—Flowers yellow, striped and spotted with purple, and somewhat resembling *B. Dearei* (Reich. f.). It flowered with Madame la Marquise de Nattes, Riberaie, Bordogne.

Cattleya ciliacea, Rolfe.—The plant is well known in gardens as *Cattleya superba*, but remained on the basis

of the original description as *Cymbidium violaceum*, Knuth, in *Hamb. et Boop.*, 185. Flowers purplish-rose, with crimson-purple front to the lip.

Chysis lutea, Ldl.—A fine species with yellow sepals and petals, marked with red, and whitish labellum with dark red spots; long an imate of our gardens.

Chysis Linnigheii, Lind. et Reich. f.—Although it has been in cultivation for about forty years, this species is still rare. It is one of the prettiest of the genus. Flowers white, tinged and marked with rose, and with yellow at the base of the lip. Like the other species named, also from Mexico, it does best in a basket suspended, and should have a dry, but not too cold resting season.

Cypripedium × *Kabeli*, Reg. Young.—An interesting cross, raised by Reginald Young, Esq., Liverpool, between *C.* × *onanthium superbum* and *C.* × *Youngianum*. This makes the fiftieth hybrid *Cypripedium* illustrated in this work.

Grammatophyllum Ellisii, Ldl.—Also known in gardens as *Grammangis Ellisii*. A strong-growing hothouse

hybrid between *V. teres* and *V. hookeriana*. The illustration was taken from a specimen supplied by Sir Trevor Lawrence, Bart., from the same plant which produced the fine inflorescence from which our supplementary illustration, August 13, 1899, was prepared.

PITOSPORUM CRASSIFOLIUM.

THIS, the "Karo" of New Zealand, was first made known by Banks and Solander, and figured in Kirk's *Forest Flora of New Zealand*, t. 14. It is an evergreen tree, with blackish rind and leathery entire leaves. The chocolate-coloured flowers are clustered at the tips of the branches, and are succeeded by oblong, obtuse, four to five-valved capsules, each about $\frac{1}{2}$ inch long, containing numerous black seeds. Our

development of differences on various lines to the living world as we know it, is part and parcel of the same problem. These innumerable modifications, however, permit of a certain amount of speculation and theory which the greater problem has so far precluded, the line between the crystal and the lowest organic form of life being an apparently absolute hard and fast one, the formative arrangement of particles or atoms in the former never presenting a trace of the assimilative phenomena and reproductive power which characterises the latter. The one we may explain by the peculiarities of molecular attraction and repulsion incidental to elemental substances or their combinations; the other defies all explanation whatever.

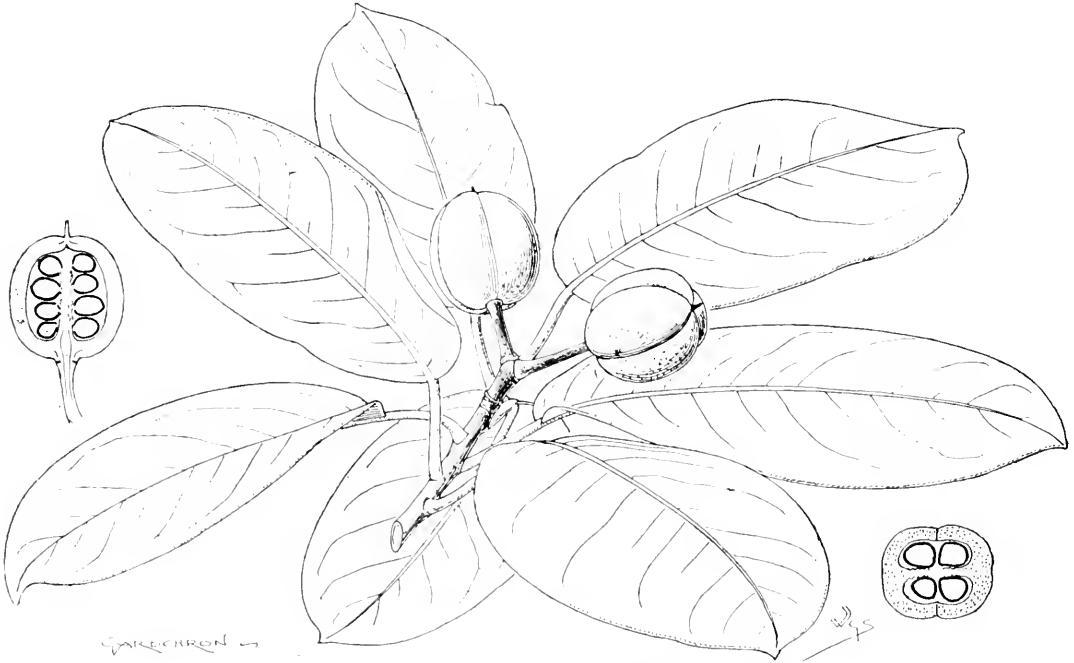


FIG. 130. PITOSPORUM CRASSIFOLIUM.

species, from Madagascar. Sepals yellow, heavily marked with brown. Petals and lip white, with purple lines.

Laelio-Cattleya × *Cyclopogon* var. *White*—Originally raised by Messrs. Jas. Veitch & Sons, of Chelsea, with whom it flowered in 1872, and was named after their excellent Orchid foreman, Mr. Chas. Canham. It is still one of the showiest hybrids.

Cypripedium Michellianum, Cogn.—A new species, with yellow flowers closely resembling those of *C.* *aromaticum*. Named in honour of M. Marc Micheli, of Geneva.

Polystachya pubescens, Reichb. f.—A pretty cool-house and almost perpetual flowering species widely distributed throughout the Cape Colony and Natal. It is figured in *Thes. Cypripidis*, H. p. 51, t. 137, as *Polystachya Lindleyana*.

Schoenhrakia Thomsoniana, Reichb. f.—Flowers yellowish with purplish-crimson front to the lip. The figure was taken from the plant for which Sir Trevor Lawrence, Bart. received an Award of Merit at the Royal Horticultural Society, July 2, 1901.

Trichopetalum tortile, A fine old species, introduced from Mexico to England in 1850. Sepals and petals narrow, twisted, greenish, with brown markings on the middle; lip white, with yellow and red markings in the centre.

specimen (fig. 130) was kindly furnished us from Trinity College Botanic Garden, Dublin, by Mr. Burbidge, who tells us the shrub is hardy in that locality. Mr. Kirk, in his *Forest Flora of New Zealand*, says that the tree is of great value for shelter, especially in places near the sea, as it resists the fiercest gales, and may be seen growing in places where it is exposed to the influence of the spray. With such a character from so competent an observer, it is most desirable that it should be grown for trial on our southern and south-western coasts, as also in the West of Scotland, Ireland, and the Channel Islands.

VARIATION AND ENVIRONMENT.

THE cause of variation in plants is as profound a mystery as the origin of life itself, and involving, as it does, a certain remodelling of the life form which has undoubtedly led up by gradual accretion and

Recent speculation regarding variation is inclined to impute it to the influence of environment, and to regard it as a responsive or sympathetic yielding thereto by which the plants are adapted to changes. As against this, we have the theory that plants and all other forms of organic life, vary indefinitely—i.e., in all directions, whether advantageously, or better fitted to the environment, or disadvantageously, or worse fitted, the environmental factors eventually resulting in the selection of the fittest, and the elimination of the remainder. The former theory seems the most reasonable, regarding Nature from the economical standpoint; and it is to a certain extent supported by the fact that plants certainly do adapt themselves to changed conditions during their own lifetime, becoming, for instance, stunted and thicker in exposed and dry positions, or more leafy and slender in sheltered, moist ones—and it can hardly be doubted that the reproductive

system would in course of time be affected by this enforced change of form and texture, so that the progeny would assume a fixed character, and even form a distinct species. This, however, is hardly variation proper, of which we have innumerable instances in which no such gradual change under enforced conditions is induced, but in its stead a sudden change, often transforming the general structure, and yet accompanied with an equally sudden and complete responsive change in the reproductive organs, so that the type is then and there fixed on lines which it is difficult to characterise as other than specific.

We have here, consequently, two entirely distinct modifying factors, and there is little doubt that we are largely indebted to both for our genera and species, and not merely to the first cited and slower modulating process induced as described. Although it may be difficult, or even impossible, to draw a hard and fast line between minute variations which merely give an individuality, frequently hardly appreciable, and the extreme ones which constitute sports, these latter certainly do not seem to lend themselves to the idea that they are responses to environmental pressure. On the contrary, as found in Nature, they usually occur as more or less isolated specimens, growing under precisely the same conditions as the myriads of normal ones with which they are associated. They vary, too, in all sorts of ways, which it is impossible to regard as fitting them better for existence than their often robust companions. Some, indeed, would obviously have perished in their place of origin, owing to their being handicapped by dwarfness, or other disqualification for the struggle. The variation, too, often consists of peculiar differences in the shape of foliage, which, however curious they may be, it is impossible to regard as adaptive. In short, they vary in all directions, or indiscriminately, and must consequently, in many cases, be wiped out in the struggle for existence. The writer, for instance, has found extra foliose and depauperate Ferns which have originated as sports within a foot of each other, and under precisely similar conditions of soil, moisture, and exposure, while hundreds of the purely normal types were associated under same conditions.

To revert to the opposite arguments cited, it may also be pointed out that in the long run an indiscriminate variation is better fitted to secure existence under sudden changes than a less seemingly wasteful one, which tends simply to adapt the plants to slow changes. If this alone existed a sudden change might simply extirpate them entirely, and any seeds left behind would also perish. With indiscriminate variation, however, we have a provision against indiscriminate change of environment, which when occurring finds a few individuals adapted to it, and these having a clear field will re-establish the race on their own lines. In the human race, it is the nation that has the most diverse individuality which is best fitted to spread; it has its individuals fitted for every contingency, however unforeseen, and hence can always hold its own. The nation, on the other hand, which has become moulded exclusively on native lines, and to home environments, is at the mercy of every cataclysm.

So with plants it must not be overlooked that the particular habitat of an individual plant and the particular environment it involves, is not as a rule the prison, so to speak, of its progeny. Nature has provided it with a myriad contrivances to scatter this progeny abroad. Hence when so scattered, the offspring find themselves, may be, in quite

different surroundings, adverse probably to the bulk of them; but given great diversity not merely of structure but also of constitution, undoubtedly a greater number would be established, than if they were all particularly fitted for the parental habitat only in the theory of locally adaptive variation. Slow adaptation, in short, is one factor; indiscriminate variation, including the wide ones, another. In the peopling of the world with organic life, and however much of the origin of the latter types may puzzle us, it is not advisable to insist upon their being subject to laws which in most cases they repudiate by their constitution, and the conditions under which they originated. *C. T. Drury, F.L.S., V.M.H.*

The Week's Work.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Figs.—Pot trees which were plunged in bottom-heat as advised during last month, and have been syringed occasionally with tepid water, will now be swelling their peduncles, and may be afforded a little more atmospheric moisture and a somewhat higher temperature on bright days. The rise, nevertheless, must be very slight, and that only in the day time. Syringe the trees at noon, when the small amount of ventilation is closed for two or three hours, not so much to raise the temperature as to secure a moist, genial atmosphere. The trees will make good progress especially if, as advised in a previous Calendar, the pots are upon fixed pedestals, and the fermenting material is frequently turned and replenished. About this time the first top dressing of rich compost may be afforded the roots, and very weak tepid liquid-manure once or twice a week will do good service if used for washing it in. The pots being filled with roots, as all early-bearing Figs should be, it is more than probable the space for repeated top dressings and supplies of water will be very limited, but good feeding being so very important, this difficulty can be got over by placing bands of Zinc about 3 inches deep just within the rims of the pots. The roots must never lack for tepid water, and to prevent possible injury from this cause, allow the root-fibres to find their way into the sods of turf placed on the tops of the pedestals. Many people pride themselves on keeping the roots of pot fruit-trees confined to the pots, but Fig-trees being gross feeders, and so liable to cast their finest and most forward fruits, the departure in this case may save the crop. The temperature may range from 50 to 55 by night and 55 to 65 by day for the present, varying a little according to the state of the weather.

Late Houses in which the trees are allowed to grow naturally must be kept very dry and as cool as possible by the most liberal ventilation, unless the weather be exceptionally cold. If the pruning be not already done, it may be performed at any time, and the trees, as a matter of course, may be washed on wet days, but not when the nights are likely to be frosty. When this has been done, the roof and trellis may be washed, or as we do here, give the woodwork a coat of paint, and lime-wash the walls, leaving the trees to rest for the present, as it is not a good plan to hurry the operation of tying-up to the roof trellis, where severe frost is more likely to effect mischief. So liable are cold-house trees to injury, that it is a good plan to keep them near the dry floor, and cover with Fern or straw till after the turn of winter.

Cucumbers.—Winter plants must not be allowed to carry very many fruits, unless they are extra strong. Remove two-thirds at least, also the male blossoms and tendrils with any superfluous shoots and leaves. Do not stop the growing points too severely for a few

weeks, and afford a moderate supply of water; twice a week will suffice in most cases, but plants in pots or boxes will require water oftener, and liquid-manure occasionally. A night temperature of 65 to 70°, falling to 60° in severe weather, and 70 to 75° by day, advancing to 80° or more with sun, will be suitable. The soil will require moderate additions at the roots from time to time, taking care that the soil has been previously warmed. Press it firmly, but not hard. The bottom-heat should be kept at about 80°. The atmosphere should not be very moist, and damping may be done only on bright mornings or early in the afternoon. Remove the old foliage and exhausted growths from the autumn fruits, but do not stop severely the growing points. Avoid overcrowding, and especially over-cropping. Fertilise the flowers during dull weather.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bletou, East Endleigh, Devonshire.

Asparagus.—Where much Asparagus is wanted in the winter and spring, and home-grown roots are employed, preparations for next year's plantation should now be taken in hand, especially if the soil is retentive, trenching it 2 feet deep, and affording it a heavy dressing of partially decayed manure at the bottom and between the two main sittings. Most kitchen gardens on heavy land are drained; still, if rough garden-rubbish of all kinds be put into the bottom of the trenches, the crops will feel the benefit. If the beds can be placed in the garden in a sunny open part so much the better.

Peas.—Those who raise the early Pea plants in pots should sow the seed at this date, and of a moderate degree of thickness, and thin out the seedlings to a distance of 3 inches apart when fit. The pots should be filled with loamy soil and a sprinkling of lime rubbish, having well drained the pots and placed some soil sittings over the crocks, and made the soil fairly firm. Keep the plants quite near the glass, allow them plenty of air in mild weather only, and use fire-heat during hard frosts, as Peas must not be hurried in the least in the early stages, which is the one great difficulty in forwarding Peas under glass.

Mushroom-house.—The beds that were made in the month of September being nearly exhausted, may be assisted to produce a few more Mushrooms by affording water at 90° warmth, having a teaspoonful of salt per 1 gallon of water. Make up more beds, and cover the same with litter well beaten down so as to keep the heat in the materials. Let a temperature of 58 to 60° be kept up, and where hot-water heating is used, a light dousing over of the beds overhead with a syringe may be necessary every few days, nothing being more harmful than a parching heat. Sometimes Mushroom-houses and cellars are not in need of artificial heat, that from the fermenting stable-manure being enough, and in such houses the most fleshy, heavy Mushrooms are obtained. Some amount of ventilation is wanted in most Mushroom-houses for the exit of the fumes generated by the stable-litter, if not for the benefit of the Mushrooms. Instead of having in heated Mushroom-houses clean swept floors of tile or stone, the floor should be covered with litter, sawdust, soil, or something that will retain moisture.

THE FLOWER GARDEN.

By T. H. STADE, Gardener to Lord Pultimore, Pultimore Park, Exeter.

Hardy Climbing Plants.—The long shoots of climbers should be secured by ties or shreds and nails, and many of the plants which bloom during the early summer may be pruned at this date, if not likely to be forced into premature growth by the pruning. The pruner must possess a knowledge of the time of the plants' flowering, and of the mode of flower production—whether on old wood, on spurs, or on young shoots, and prune little or much

accordingly. The straggling shoots of Ivy should be cut closely in, and all shoots kept away from the eaves of buildings and gutters. The close trimming of Ivy generally should not be carried out till March. *Jasminum nudiflorum* is now opening its flowers here, and its pruning must be left until flowering is over. The deliciously-fragrant blossoms of *Chimonanthus fragrans*, a capital subject for planting on the lawn close to the walks, or on a part of a wall near a doorway, will soon be opening. The flowers may be cut with a short bit of the shoot attached, and placed in saucers of water in rooms. A patch of *Tussilago fragrans* (the Winter Heliotrope) should find a place in the border of herbaceous perennials, or at the margin of a shrubbery, where the sun can reach it for at least half the day, or it will not flower satisfactorily; and once planted it requires little attention beyond keeping the soil clear of weeds. The plant flowers freely in mild weather.

Vlex europæus, the Furze Gorse or Whin, is a common shrub sometimes planted in groups in the pleasure-grounds for the sake of its early flowering; also *V. c. nanus*, a dwarf-growing variety flowering in the summer. The plant is suitable as an edging for large, informal beds, as a finish to a shrubbery, and for planting banks. The plant is generally grown in pots by the trade, and should be planted carefully, with not much root-disturbance. The seed can be got true, and where much ground is to be covered, sowing may take the place of planting. As rabbits and hares will eat the young plants in hard weather, it is well to fence in the planted area whilst the plants are small, as a defence against these animals.

Bedding Plants.—Carefully afford water to Pelargoniums in the greenhouse and greenhouse-pits, and generally do everything possible to avoid damping off during this month and the next. At the end of that time the potting of store plants may take place, and the plants be kept gently growing. *Colens*, *Bresina*, *Alternanthera*, *M. sembranthemum*, *Ageratum*, &c., should be kept at this season on shelves, or somewhere near the glass in a house or pit with a temperature of 55 at night, and 60 by day, affording them air in mild weather, and just enough warmth and moisture as will keep growth gently on the move, and the plants as sturdy as possible, so that when the time arrives for propagating, there may be a good stock of shoots available for cuttings. The hardier plants being harboured in cold frames and extemporised shelters should be kept clear of decaying leaves or anything likely to favour damping off. Cuttings of shrubby *Calceolarias*, *Violas*, or *Pansies*, when rooted, should be afforded air gradually at the first, and afterwards freely. Water, when necessary, should be applied in the forenoon, and in frosty weather not at all, or the plants may decay. If slugs give trouble, apply fresh soot and lime.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MESSERS, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Cologyne cristata. The different varieties are now advancing their flower-scapes, and should be afforded moisture in moderation at the root till the flower-buds appear; but satisfactory results cannot be expected where this situation happens to be infavourable. I have been requested on several occasions in the last few years to visit gardens in order to advise on these plants, and to reply to many questions through the press concerning the falling of *C. cristata* to flower satisfactorily in the vicinity of London. In almost every case the plants had made satisfactory growth, and the flower-scapes had grown to the length of 3 or 4 inches; in one case the flower-buds were just discernible, then, without exception, these have become black and decayed in a few days. Where these cases occur, the gardener is usually given to understand that he is unacquainted with the requirements of the plant. Let me assure those who are of this opinion that the cause depends on circumstances over which

gardeners can have no control. Plants of *C. cristata* are to be found in almost every collection of Orchids, and any failure to flower the plant satisfactorily is a matter for regret. They have usually to be cultivated in a stove or other warm glass-house, where the usual damping-down is carried out, and as fogs occur in frosty weather, when, of course, much fire-heat is employed, and much water has to be used to counteract the dryness caused by the artificial heat. It is under such conditions that the flower-scapes become injured, although it may be some days before the damage is apparent. I have had experience in this matter, and consider the best means to be adopted is to remove the plants to a cooler house after growth is finished. This will retard the development of the flower-spikes till the days begin to lengthen, and the house being less warm is not desiccated by fire-heat, and is not so moist. Under this kind of treatment scarcely any damage occurs, and when the flower-scapes have developed to a stage requiring more warmth, the plants are removed to an intermediate-house. *Cologyne alba* flowers later, and is less difficult to manage. It is a remarkable fact that *Cologyne* growing in gardens situated on the hills adjacent to Camberwell have not suffered from fog until the last two or three years.

The Cool House.—The plants of *Oncidium ornithobrychium* that have just passed out of flower should now be rested for a short season, moisture being afforded merely to keep the pseudo-bulbs plump. *Epidendrum vitellinum*, plants of which have been in flower for some weeks, should not be allowed to retain their flower-spikes after this date if all the blossoms have expanded. The plants may then be afforded a complete rest, but little water being applied to them until new growth appears.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HESSEY PARKER, Esq., Prest-twood Hall, Longthorpe.

Bulbs, continued.—The condition of the bulbs of *Polyanthus Narcissus Gloriosa* being now suitable for forcing, place them in a forcing pit having a temperature of 50, a higher degree of warmth being detrimental to *Polyanthus Narcissus* at this date. *Duc Van Thol's*, *Potrebakker*, and *Chrisolora Tulips* may also be brought into the forcing-house and afforded somewhat different treatment to the foregoing and to bulbs in general. They may be forced in a temperature of 55° to 60° in a forcing-house or beneath the stages of pits and houses having the necessary degree of warmth. The soil in the pots should be covered with moss, which should be syringed twice daily, a practice which favours growth in the bulbs. When the growth is well above the soil, gradually inure the plants to the light in a house slightly cooler, where the flowers should expand. Tulips are sometimes forced in boxes of soil for the sake of the flowers for special purposes, and the bulbs lifted from the soil and arranged.

The Greenhouse.—The unsettled state of the weather makes it very difficult to meet the requirements of the plants grown in this house; for during cold spells some fire-heat will be called for, and during mild weather air must be freely afforded. On sunny days following moist sunless ones, the ventilators should be opened widely, and fire-heat made use of for a few hours before and after noon, for the purpose of dispelling damp. Not much good follows the use of artificial heat in damp weather, and opening the ventilators, the air admitted being itself damp. Any plants of *Euphrasia* and *Eria* in flower should be placed in prominent positions, and plants in bloom of *Azalea mollis*, *A. indica*, *Deutsche Perle*, and other varieties, may be brought into this house for a few days before being taken to the conservatory. *Primula stellata* will now be making a good display, succeeding that of the zonal *Pelargoniums*. This variety of *Primula* is a useful plant for affording cut flowers, and for general decorative uses. The other plants now avail-

able are Roman Hyacinths, Paper-white Narcissus, Cyclamens, *Begonia Gloire de Lorraine* and its white variety, *Mignonette*, *Camellias* whose growth was forwarded in the spring, &c. If plants of *Lapageria rosea* and *rosa alba* are out of flower, the weak and superfluous shoots may be removed; this should be performed without delay, *Lapagerias* being early in growth, and late pruning means late blooming. When the pruning is finished, thoroughly cleanse the plants of thrips and scale with petroleum emulsion, and regulate the shoots, affording them space for vigorous development.

THE HARDY FRUIT GARDEN.

By C. HERRIS.

Pruning.—The Morello Cherry being usually treated as a wall-fruit tree, and frequently put on cold or retarding aspects, advantage should be taken of mild weather, when the men can work in some degree of comfort, to prune and train the trees. The Morello fruiting on wood of the previous year, as many of these shoots should be retained as space can be found for, removing many of the old shoots that will not bear fruit again. The young shoots that were fastened temporarily to the wall in the late summer and autumn should be regulated according to the space available, and made secure with nails and shreds, or if wire be used on the walls, then with ralia. Young shoots should not be nearer together than 3 inches. Fig. 125 in last week's *Gardeners' Chronicle* affords a capital object-lesson in training, although trees which may not have been formed truly from the youngest stage, will scarcely be of such perfection of form as that represented. With careful pruning from year to year, even ill-shaped trees may be greatly altered for the better. After training is finished, let the trees be syringed with petroleum emulsion, made by dissolving 1 oz. soft-soap in 3 gallons of rain-water, adding a wineglassful of petroleum, the whole being well stirred whilst being used. A few weeks later, spray the trees with weak soda and potash mixture, using 12 gallons of water to 1 lb. of each.

Dessert Cherries require somewhat similar treatment to Morellos, but as the fruit comes chiefly on spurs, so many young shoots are not required, and these should be cut back to two or three buds at the base; and these spurs will, in a year or two, produce fruit-buds. Being strong growers, the trees require more space between each other, and between the shoots, 4 to 6 inches being a suitable distance. As an injury to the rind or bark of a sweet Cherry-tree leads to gumming, care should be taken that no nail or stud or even a wire presses against it, and that shreds and ties are not made very tight.

The Plum.—The pruning of Plum-trees on garden walls may well follow that of the Pear and Cherry; and provided the summer-pruning afforded was properly carried out, the amount of pruning required at this season will consist chiefly in removing old barren shoots and laying in young and fruitful ones, and shortening the fruit-spurs. Old trees having long or very numerous fruit-spurs should have some of these reduced in length and number each year. In most instances of cutting back wholly or partially, buds now dormant will break at the base. The spurs of Plums may stand out 3 to 4 inches from the face of the wall, not more, otherwise much of the shelter a wall provides is in a measure lost. The leading shoots of young Plum-trees should be left 2 to 3 ft. in length, according to strength, weakly ones shorter; lateral shoots may be reduced to one or two buds. Syringe the trees with the caustic soda and potash solution.

CHRYSANTHEMUM R. HOOPER PEARSON.

MESSRS. H. CANNELL & SONS, Swanley, have sent us specimens of a sport from this variety, with bronze-coloured flowers, instead of the rich yellow-colour characteristic of the type.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER. Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DEC. 17. (Royal Horticultural Society. Committees meet at Westminster.

SALES FOR THE WEEK.

MONDAY, DEC. 16.—Bulbs, at Stevens' Rooms.
TUESDAY, DEC. 17.—Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, DEC. 18.—Dutch Bulbs, Azaleas, Rhododendrons, Palms in variety, Roses, Border Plants, Japanese Lilies, by Protheroe & Morris.—Lilium speciosum, &c., at Stevens' Rooms.
THURSDAY, DEC. 19.—Dutch Bulbs, by Protheroe & Morris.
FRIDAY, DEC. 20.—Orchids in variety, by Protheroe & Morris.—Orchid sale by J. Cowan, at 120, Pilgrim Street, Newcastle.—Palms, &c., by H. W. Rendell.
(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—40°.

ACTUAL TEMPERATURES:—LONDON.—December 11 (6 P.M.): Max. 41°; Min. 36°, December 12—Cold rain.
PROVINCES.—December 11 (6 P.M.): Max. 46°, Scilly, Min. 34°, N.E. Scotland.

EVERYONE who has had occasion to study, or even only to attempt to identify, the woods of foreign countries as obtained from the timber merchant, must have been struck by the paucity and conflicting nature of the information that is generally available as to the name of the specimen and the source whence obtained. Of course, in a broad sense, the structure of wood is well known to botanists; the difficulty arises when an attempt is made to identify any particular specimen that may present itself. As usual, popular names, even when they exist, are worse than worthless; they are actually misleading.

A few days since, we had occasion to make enquiries as to the wood employed for sleepers on the Canadian Pacific Railway. The reply we received from an official in the Company's service was that the sleepers made use of were constructed of "yellow Pine" or of "Mahogany." Turning to Professor SARGENT's invaluable *Tenth Census Report* (1884), we find four species of Pinus, each called Yellow Pine, but probably neither of them utilised for sleepers on the large scale, if at all, unless it be *P. ponderosa*. The Douglas Fir (*Pseudotsuga Douglasii*) is, it appears, known as the Yellow Fir—and it is very likely used for railroad purposes—but it is not, except in a very broad sense, a Pine.

Mahogany, in the ordinary acceptation of the term, is not likely to be used in Canada for sleepers, and a similar remark applies to the two species of *Cercocarpus*, called Mountain Mahogany.

In like manner, if enquiry be made as to the source of "Rosewood," "Ebony," and many other woods in common use, it will be found that the difficulties of determination

are accentuated by the circumstance that the terms are applied to woods derived from several trees. The same thing happens notoriously in the case of the Australian Eucalypti. It is needless to specify other instances of a fact that is too painfully obvious. A few modern English works may be specially mentioned as furnishing encyclopedic details relating to the structure of timber. Among them are the *Census Report* of Prof. SARGENT previously referred to, and of which the *Silva* is an extension; Mr. GAMBLE's excellent *Manual of Indian Timbers* (1881); and Sir FERDINAND VON MUELLER'S *Eucalyptographia*.

We allude to this subject in reference to an interesting lecture on the identification of wood before the Society of Arts by Mr. HERBERT STONE, which is reported in full in the *Journal* of the Society for December 6.

The Chair was most appropriately occupied by Sir DIETRICH BRANDIS, whose acquaintance with this subject is unrivalled.

Mr. STONE passed in review the general structure of the wood as it may be seen by the naked eye, or by the use of a pocket-lens. The presence or absence of pores indicating the cut end of vessels, and their position; the nature and appearance of the medullary rays, and other prominent characteristics, were referred to.

Mr. STONE reflected on collectors and descriptive botanists for the comparatively little attention they pay to points of economic importance; and Mr. T. G. HILL, in the course of the discussion, said that "botanists often forget in working out questions of purely academic importance the value of the points to those who were interested more from the economic point of view." We think the works already mentioned, not to speak of the publications of BRANDIS, NORDLINGER, HARTIG, MAYR, may be cited on the other side. The works of ROXBURGH, WHITE, FALCONER, ROYLE, HOOKER, and of late years the publications of Dr. AITCHESON, and the *Kew Bulletin*, also go to disprove the general application of the statement.

Moreover, it must be remembered that the collectors and descriptive botanists are comparable to the miners who discover and bring the ore to the surface. It is for others to utilise it when so obtained. The principle of the division of labour is properly applied here. A fine collection of timbers, got together by collectors, exists at Kew ready to hand for examination, but so far as we know, relatively little use has been made of it by those whom it most concerns.

But we may let Dr. HENRY defend the collecting botanists in his own words:—

"Dr. AUGUSTINE HENRY thought the charges brought against botanists by the reader of the paper were not altogether fair. When he began to collect plants in China, although he had no instructions to take specimens of trees, he made a collection in the first year of specimens of woods, which he sent home to Kew, but he never heard a single word about the collection subsequently, from any specialist in the study of woods. There were many collectors in almost every part of the world who would be willing to do such work if they were requested to do so. Most of the ignorance on the subject was due to the fact that there was no proper intercommunication between scientific men at home and travellers abroad, who were willing to work but did not know how to set about the matter. He had

collected botanical specimens in various parts of the forests of China, first of all in the central provinces of Hupeh and Szechwan, then in Formosa and the Island of Hainan, and during the last four or five years in the province of Yunnan. There were immense forests in the very high ranges of the central provinces, ranges really branching off from the Himalayas. Through that vast unexplored region there were immense forests everywhere. At the top from 7,000 feet upwards there were great belts of coniferous forests, where trees were to be found as straight as an arrow, 200 feet in height, with a diameter of 4 or 5 feet. Below 7,000 feet various mixed forests were to be found. Even in small woods of about two acres in extent more species of trees were to be found than occurred in all Europe. In such a wood probably 100 trees of different species might be found, whereas, in Europe, there were only seventy species of trees altogether. There were at least 100 distinct species of Rhododendrons known in China already, and the figure, he was sure, would be increased three-fold. Sixty or seventy species of Oaks were now known in China, although it would probably be discovered in the future that there were at least 150 or 200 varieties. At present, it was perfectly impossible to deal with forests in China in a practical way, owing to the absence of roads and railways, and the want of security for capitalists. In some places the woods were fast disappearing. About 100 years ago missionaries introduced the Potato into China, and the natives, finding that it grew very well at high altitudes, were destroying the forests in order to get a miserable crop of Potatoes. He had recently received a letter from a friend to the effect that the Potato disease was rife, with the result that whole villages of Chinese were deserting the mountains, and there was some chance of the forests being preserved. He hoped the disease would go on and prosper.

Mr. T. F. BOURDILLON said the forests in Travancore were very extensive, including 500 or 600 different species of timber, many of them peculiar to the country. Unfortunately a similar state of things existed there as in China; the hillmen cutting down the forests in order to plant grain and tobacco. The Government was stopping them to a certain extent, and endeavouring to encourage the forests to grow again. He thought the work being carried on by Mr. STONE, if pushed further, would be of very great assistance indeed in identifying timber.

Dr. W. SCHLEICH, C.I.E., thought the systematic botanist would have to learn something from the men who, with a lens and a microscope, examined the structures of wood, and that a great deal of the present classification might have to be very considerably altered in accordance with further experience as to the similarity of the structure of the timber of different trees. Last February he read a paper before the Society, in which he demonstrated that the imports of timber into Great Britain and Ireland alone amounted to the net value of £25,000,000 per annum, and suggested that if that money, instead of being paid to people outside, could be paid to home timber-growers, it would be an advantage to the country. He also pointed out that the certainty of future supplies, more particularly of particular kinds of timber, was doubtful, and that new sources of supply must be opened up. When those new sources were used it would be essential to know exactly what kind of timber came to this and other countries; and he believed Mr. STONE'S classification would be of the utmost importance in supplying such information. There was no doubt the Chairman had originated

the study of the anatomical structure of timber in India, and the beautiful description of the 800 pieces of timber in a well-known volume was dictated by him to his two assistants. Mr. GAMBLE now had ready for the Press a new edition of his work, giving a description of 1,500 different kinds of timber. He was told that there were 4,700 woody plants in India, and there must be many more all over the world; and as a description of only 1,500 of these had appeared, Mr. STONE had a magnificent field of work before him. If he succeeded in getting from the Colonial Governments specimens of different kinds of timber, and prepared authenticated collections of them which could be placed in a central place, such as the Imperial Institute, the difficulties of the timber-dealer would be to a large extent removed.

"Mr. STONE in reply said: With regard to botanists, it was too much to expect travellers to burden themselves with specimens, but if they could supply the vernacular names and mention the colour and a few details, it would be most precious information. The report of the *Challenger* expedition, which was paid for with Government money, simply contained a list of plants with a few English names; but so vernacular names, or useful information of any kind, was given."

**** OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1902. *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.*

THE CORONATION.—It is authoritatively announced that this ceremony is to take place on Thursday, June 26. Rose-growers please note.

THE AVENUE, HATFIELD.—Our Supplementary Illustration for the present issue shows the fine double Lime-tree avenue at Hatfield, at the southern end, where it debouches upon the gravelled space fronting the carriage entrance. This avenue is not very old, although the trees of which it consists are of full size, and meet at the top, and the shade is very dense when they are in full leafage.

We also afford our readers an illustration (fig. 131) of one of the finest specimens of *Aerides Lawrenceanum* ever seen under cultivation in this country. It will be acknowledged by those who understand Orchid culture, and that of *Aerides* in particular, as being a very fine example of cultural skill on the part of Mr. G. NORMAN, the head gardener to the Marquis of SALISBURY at Hatfield House. The plant is more than 3 feet in height, and recently carried five very large spikes of bloom; some of the spikes were branched, and the largest measured upwards of 3 feet in length.

ROYAL HORTICULTURAL SOCIETY.—The last meeting of the Royal Horticultural Society this year will be held on Tuesday, Dec. 17, in the Drill Hall, Buckingham Gate, Westminster. An election of new Fellows will take place at 3 o'clock.

—At a General Meeting of the Society held on Tuesday, November 26, thirty-seven new Fellows were elected, amongst them being Sir JAMES BLYTH, Bart., Lady FITZ-HERBERT, Capt. C. N. LAALL, EDMUND DEACON, M.F.H., and ERGENE E. HENNESEY, B.A., B.Sc., making a total of 888 elected since the beginning of the present year.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held Thursday, Dec. 19, 1901, at 8 P.M., the following papers will be read:—1. "On the Brain of Recent and Fossil Lemurs," by Dr. G. ELLIOT SMITH. 2. "On the Ostracoda collected round the Fuaifuti Atoll," by Mr. F. CHAPMAN, A.L.S., &c. Exhibitions: 1. A gigantic Argulus from Japan, and a specimen dredged at the Cape, by Prof. G. B. HOWES, F.R.S., Sec.L.S. 2. A new Polyzoon from Tanganyika, by Mr. J. E. S. MOORE. 3. An example of White's Thrush (*Turdus varius*), shot near Clavering, Essex, by Mr. MILLER CHRISTY, F.L.S., &c.

"**BOTANICAL MAGAZINE.**"—The plants figured in the December number are as follows:—

Cyrtopodium palmifrons, Reichenbach and Warming, tab. 7807, Kew.—A remarkable



FIG. 131. *AERIDES LAWRENCEANUM*, AS GROWN AT HATFIELD.

Orchid with tufted, erect stems 2 feet high, bearing sheathing, distichous, linear, lanceolate leaves, 6 to 7 inches long; the sheaths are about $\frac{1}{2}$ an inch long, lemon-yellow with a purplish margin. The flowers are numerous, borne on tall, much-branched panicles springing from the base of the stems; each flower is about 1 inch broad, the segments oblong, subequal, yellow spotted with red; lip three-lobed, smaller than the segments. It is a native of Central Brazil.

Eucalyptus Gunnii, var. *montana*, Hook., tab. 7808.—A native of Tasmania and Victoria. The only species that has withstood the climate of the East of England. At Kew a tree opposite the Palm-house was long grown as *E. polyanthemos*. It was cut to the ground in severe winters, but sprang up again in spring.

Impatiens psittacina, Hook. f., tab. 7809.—An annual species from Burma; remarkable for its large, pendulous flowers of a pinkish colour, the large spur white, striped and blotched with carmine. Kew.

Spiraea Millefolium, Torrey, tab. 7810.—This plant has the foliage of a Tansy, or of an Achillea, but the white flowers arranged in a dense, terminal panicle, are those of a *Spiraea*. See *Gard. Chron.*, 1897, vol. ii., p. 237, fig. 72; California. Kew.

Megacletium leucochilum, Rolfe, tab. 7811.—A curious West African species, with linear, oblong, acute leaves, and long, flattened, flower stalks, from each edge of which are given off the small, yellowish flowers. Kew.

PROFESSOR CRÉPIN.—An excellent portrait of the late Director of the Botanic Gardens, Brussels, is given in the current number of the *Revue de l'Horticulture Belge*, together with a sympathetic and appreciative account of his career, although by inadvertence no mention is made of CRÉPIN'S labours in the search for, and in the description of fossil plants. His *Guide du Botaniste* is a work which may be classed with ALPHONSE DE CANDOLLE'S *Phytographie*. No higher praise can be given.

M. PHILIPPE DE VILMORIN.—On November 6 a dinner was given to M. PHILIPPE DE VILMORIN by the seedsman of Philadelphia and New York, and the Directors of the Wholesale Seedsman's League, at the Bellevue Hotel, Philadelphia. The menu was very choice, and the menu-card was specially designed, bearing the French and American flags in colours, surmounted by an eagle. Pages were provided for the autographs of those participating in this notable affair.

PROFESSOR ROBERT HARTIG.—The death of this eminent botanist took place on October 10. HARTIG was Professor in the University and Forest School of Munich. His researches into the natural and the diseased structure of wood, especially as affected by fungi, gained him a very high place, alike in botanical and in forestry circles. His *Text-Book on the Diseases of Trees*, translated by Dr. SOMERVILLE, and edited by Prof. MARSHALL WARD, is a most valuable and lucid compendium, of which we published an account in December, 1891.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The monthly Committee meeting of this Society was held on Monday evening, 9th inst., at the Caledonian Hotel, Mr. C. H. CURTIS in the Chair. The minutes of the last meeting were read and confirmed. Two new members were elected, making a total of 83 for the year. Two members only are now on the Sick Fund, but five others have received sick pay since the last meeting, the amount paid out during the month being £16 1s. The treasurer reported that he had invested £100 in L.C.C. Stock, leaving him a balance in hand of £7 2s. 10d.

FRENCH CHRYSANTHEMUM SOCIETY.—Mr. HARMAN PAYNE read a paper (referred to on page 375) before the Chrysanthemum Congress of Bordeaux, relating to the history of the Chrysanthemum and its introduction into Europe. A large Silver-gilt Medal was awarded by the Society to Mr. PAYNE, who also received promotion at the hands of the French Government, who conferred on him the distinction of Officer of the "Mérite Agricole." Of seedlings considered notable, M. BOUTE DE BEGLES had seventeen; while M. CHANTREUR of Bayonne and M. CALYAT of Grenoble and the Marquis DE RISS also showed to advantage. The next meeting will be held at Angers.

HORTICULTURAL CLUB.—The usual monthly dinner and conversazione will take place on Tuesday, December 17, at 6 P.M. The subject for discussion will be "Birds in their Relation to Horticulture," to be opened by Mr. CHARLES E. PEARSON.

EDINBURGH SEED TRADE ASSISTANTS.—The assistant seedsman of this city held their annual dinner on Friday last in FERGUSON & FORRESTER'S Restaurant. About 110 attended, and there were a number of guests. Mr. ALEXANDER CHALMERS presided. Mr. BIEHERSTEDT proposed "The Seed Trade Assistants," and invited the kindly co-operation of the employers on behalf of the assistants as a body, believing that this would greatly benefit all concerned. Responding, Mr. T. ALISON suggested the formation of an association of the assistants in the seed trade, with the view of improving their position, if from no other than an educational point of view. They were a fairly prosperous body of young men, and had not found it necessary to resort to any extreme measures in their business relations with their employers, but there could be no doubt that they would be none the worse for being thoroughly organised.

BOOKS.—At an important six days' sale of books and manuscripts, conducted by Messrs. SOTHEBY, WILKINSON & HODGE, at their rooms in Wellington Street, Strand, last week, the following amongst many other botanical works were disposed of:—*Ortus Sinitatis, De herbis et Plantis*, &c., 1511, £15; JOHN PARKINSON'S *Theatrum Botanicum*, 1640, £117s. 6d.; another copy of the same, £2 6s.; *The Gardens of England*, by E. A. BROOKE, 1857, £5; *Alpine Plants*, by D. WOOSTER, 1871, £1 1s.; JOHN EHLVANS'S *Silva: A Discourse of Forest Trees*, 1812, £2 2s.; *The Flower Garden Display'd in above 400 Curious Representations of the most Beautiful Flowers*, 1732, £2; *Descriptive Account of the Mansion and Gardens of White Knights*, by HOFLAND, privately printed for the Duke of MARLBOROUGH, no date, £2 2s.; *Exotic Botany*, by Dr. JOHN HILL, 1759, 13s.; JOHN GERARDE'S *Herball or Generall Historie of Plantes*, 1st. edition, 1597, 18 17s. 6d.; the same, 1663 edition, 18 2s. 6d.; *A Booke of the Arte and Maner how to Plant and Grafte all sortes of Trees, how to set Stones and some Pepins*, &c., by LEONARD MASCAL, 1575, £12; *The First and Seconde Parties of the Herball*, by Dr. WM. TURNER, 1568, £10.

TUFTED BRANCHING IN CEPHALOTAXUS DRUPACEA.—We are indebted to the courtesy of Viscount POWERSCOURT for the opportunity of examining a curious specimen of branching in the female plant of *C. drupacea*, hanging from one of the branches was a globose tuft as large as a man's head, of relatively short branches, bearing numerous "fruits." This tuft recalled the "Witches' brooms" so often seen in the birch, or the "hexenbesen" of the Germans, which occur in the Spruce and other Conifers. In some cases these growths are the result of irritation, and consequent overgrowth caused by the puncture of mites, as in the birch. In other cases similar results are brought about by the action of fungi (*Ecidium*). In Viscount POWERSCOURT'S specimen there was no indication now of either fungus or insect; but, for all that, one or other may have been present at an earlier stage.

STOCK-TAKING: NOVEMBER.—The Trade and Navigation Returns for November show a falling off both in imports and exports. The imports were £16,810,553, against £19,723,730 for the same period last year—a decrease of £2,923,177—but considerably less than that

recorded for last month. Exports continue to show a downward tendency, the record for the past month being £22,812,135, against £21,624,649, a reduction of £1,182,215. In most sections of the import record is there shown a falling off, and this gives added interest to our usual extract from the "summary" table:—

IMPORTS.	1900.	1901.	Difference.
Total value	49,733,730	46,810,553	-2,923,177
(A) Articles of food and drink—duty free	13,296,241	13,795,196	+498,955
(B) Articles of food & drink—dutiable	5,467,129	4,933,687	-533,442
Raw materials for textile manufactures	16,179,831	16,619,379	+439,548
Raw materials for smelting industries and manufactures	3,171,778	4,175,021	+993,243
(A) Miscellaneous articles	1,731,294	1,915,437	+184,143
(B) Parcel Post	115,389	165,218	+49,829

To the many who are curious in the matter of Christmas cheer the information contained in our table relating to fruits, roots, and vegetables will be very welcome. The failure in the Canadian and United States Apple crops will have prepared all for the heavy "minus" quantity, and for the very greatly enhanced market value; the home grower will be able to find his own consolation here and there. But let the figures speak for themselves:—

IMPORTS.	1900.	1901.	Difference.
Fruits, raw—	Cwt.	Cwt.	Cwt.
Apples	574,143	324,567	-249,576
Apples and Peaches		38	+38
Bananas— bunches	84,701	221,835	+137,134
Grapes	159,165	106,248	-52,917
Lemons	75,493	58,349	-17,144
Nuts— Almonds	26,098	25,000	-1,098
Others, used as food	181,191	265,801	+84,610
Oranges	333,175	552,009	+218,834
Pears	34,711	25,175	-9,536
Plums	15	331	+316
Unenumerated, raw	11,726	17,865	+6,139
Fruits, dried—			
Currants, for home consumption	78,541	220,282	+141,741
Raisins	123,003	190,861	+67,858
Vegetables, raw—			
Onions— bush	716,298	637,954	-78,344
Potatoes— cwt	1,696,516	263,265	-1,433,251
Tomatoes	36,296	29,924	-6,372
Vegetables, raw, unenumerated value	£65,636	£19,956	-£45,680

The "unenumerated" section includes Pomogranates, some very fine specimens of which we have seen, the price being a penny apiece. As to the imports for the eleven months of the year just expired, we find them valued at £175,506,510, against £177,275,917 for the same period last year, or a reduction of £1,769,407. A few lines will cover all we have to note respecting our—

EXPORTS.

As we have said, the report for the month shows a decrease amounting to £1,782,213—an added million to the minus-side of the account. During the past eleven months the value of our exports was some £256,185,112, against £267,859,331, a decrease of £11,654,222. Speculation as to the causes operating here would be both useless and out of place.

"FLORA OF THE MALAY PENINSULA."—Sir GEORGE KING has reprinted from the *Journal of the Asiatic Society of Bengal*, No. 1, 1901,

another instalment (the twelfth) of his work on the Malayan flora. It is entirely devoted to the description and arrangement of the Myrtaceae.

OPEN SPACES.—The Metropolitan Garden Association appear to have a considerable amount of work on hand just at the present time and in prospect. The work may not be of an extensive nature, but all of it will be of benefit to the various localities in which the open-spaces are situated, which may briefly be stated as follows:—Laying out as a garden the churchyard of St. Philips', Avondale Square, S.E.; in Clapham to lay out that of St. Pauls; they are getting on with the laying out of All Saints churchyard, Poplar; as also with the acquisition of open spaces in Wandsworth, Deptford, Barking, and other parishes.

ANOTHER ROYAL APPOINTMENT.—We are informed that Messrs. WILLIAM HALL MASSIE and JAMES WELSH, personally trading under the title of DICKSONS & COMPANY, a name known to horticulturists for the past 150 years, have been appointed nurserymen and seedsman at Edinburgh to H.M. the King.

SILVER WEDDING.—Many of our readers will be interested to know that Mr. YOUNG, the head gardener at the Zoological Gardens, Regent's Park, and Mrs. YOUNG celebrated their silver wedding on Saturday, December 7, last. Numerous congratulations were received from friends in Scotland and elsewhere, including one from Mr. DAVID THOMSON, under whom Mr. YOUNG imbibed his earliest instructions in gardening. He has held his present appointment since 1880.

NURSERYMAN AS MAGISTRATE.—On the recommendation of the Earl of MEATH, His Majesty's Lieutenant for the County, the Lord Chancellor has been pleased to appoint Mr. DANIEL L. RAMSAY, of The Nurseries, Ball's Bridge, to the Commission of the Peace for the County Dublin.

SPORTS IN THE SUGAR-CANE.—The *Chrysanthemum* is not the only plant that "sports," though to hear the growers of the autumn Queen, one would imagine she had a monopoly of bud variation and "dichroism." This is far from being the case. The current number of the *West Indian Bulletin* contains coloured representation of bud variation in the Sugar-cane. Apart from their scientific interest as items in the history of variation, there is a chance, and not a very remote one either, that some of them may prove practically valuable as affording a cane richer in sugar, or of a more hardy constitution. Indeed, this has already been proved to be the case, and planters who should, metaphorically, leave no stone unturned, should certainly not reject such a "sport" when they see it, but test its value or its worthlessness.

THE GROWTH OF A "NASTURTIUM."—This forms the subject of a thoughtful paper written and illustrated by Mr. EDGAR SCAMELL, and published in the December number of *Pearson's Magazine*. The author traces the growth of his plant from the seed to the adult stage; and the reproductions of its appearance at different ages are very good, being instructive as well as suggestive. The suggestion afforded is that more growers, leisured amateurs especially, should thus study the life-history of plants, and keep careful record of their daily growth and habits. From a collection of reliable information in this direction, important facts would be brought to light. If we must criticise, we must remark that it is a pity that Mr. SCAMELL speaks of his plant as being a *Nasturtium*, though he admits that

the Nasturtium is really a Water-cress. The word Tropæolum is now scarcely less well known, and every opportunity should be taken of making it still more familiar. The fifteen (coloured) pictures, selected from eighty photographs by which the daily progress of the plant is recorded, are charmingly realistic, and the whole article is not the least interesting contribution to an excellent double number of the well-known magazine.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At a meeting on December 2 of the Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique of Ghent, the following awards were made:—Certificate of Merit for Cattleya Princess Clementine (hyb. 1897), from M. F.

yellow and red-br-w-n in colour; and the flavour agreeable. The tree is vigorous and productive (fig. 132). The variety originated with Colonel Salway at Egham Park in 1811.

A VISIT TO THE NORTH.—IX.

(Continued from p. 435.)

MESSRS. DICKSON AND CO.,

of 1, Waterloo Place, have their nursery at Nether Liberton, three miles out of the city in the direction of Dalkeith. The rather slow-going cable-trams, that extend over a very large area in and around the City of Edinburgh, will take you within five minutes walk of the place. Upon one of these I proceeded rather late in the afternoon of September 2 last, accompanied by Mr. Massie, senior partner of the firm, upon his "wheel."

how long the popularity of the quicker-growing species will continue?

Messrs. Dickson have a very large stock of native Pines of various ages, and those in the long seed-beds were in excellent growing condition. In these beds, and in others planted with different species, not a weed could be seen. Of native Pines three years old it was computed there were half a million plants. They had been transplanted six months previously, and as Mr. Massie said, "were just as the Scotsman likes them for hill planting," as they possessed good, fibrous roots, and have been grown upon a slope facing north. Another batch of Scots Firs (2-2) have outstayed their welcome in the nursery, and will certainly be distributed this season. Beech is generally sold at four years old, and Thorns at the same age. Of Conifers, I noticed considerable stocks of the species and varieties commonly cultivated in the North.

Flowering and other shrubs were very well represented, particularly Spiræas, Lilæes, hardy Rhododendrons, and Azalæes; Choisya ternata, Mahonia aquifolia, Weigelas, Veroniceas, Prunus Pissardi, &c.

A good area of ground is covered with fruit-trees, trained and untrained. Twenty thousand Apple-trees were budded in August last, and I remarked some very promising batches of maiden Plums and Cherries, and large breadths of Gooseberry and Currant bushes. Mention should also be made of the Roses grown here, there being a very fine stock ready for sale.

The glass-houses include eleven with span-roofs; they contained stove and greenhouse plants, Ferns, pot Figs, pot Vines, seedling Tomatos, &c. I must not omit reference to a good show there existed of the new early-flowering Chrysanthemum Craignuiller, distributed by the firm last year. It is a capital border variety, and produces flowers about 2 inches across, of deep yellow colour.

In a collection of Violas, the best novelty was named William Welch, with good flowers of rich orange colour, and extra free-growing constitution. It will be distributed during the present season.

Dahlias and many other border flowering plants are cultivated; but I have said sufficient to indicate the representative character of this well-maintained nursery, which, including nursery stock and green crops, is an area of about 100 acres.

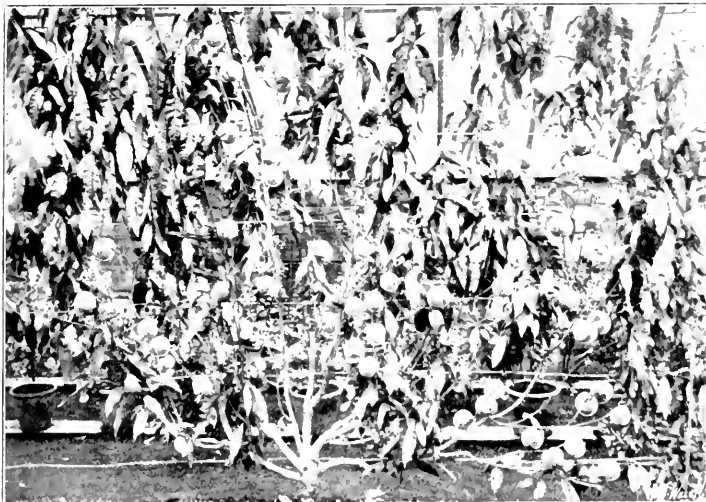


FIG. 132. A SALWAY PEACH-TREE.

JAPANESE LARCH A QUICK GROWER.

Directly we entered the nursery, Mr. Massie pointed out to me the breadths of Japanese Larch (*Larix leptolepis*) in contrast to the common Larch; at present most of the sale is for the Japanese species. The plants grow very much quicker, and commence to shoot rather later in the spring. Large numbers of the native species three years old were about 2 feet high (just in condition for removal), whilst the Japanese species also three years old (2-1), were 3 feet high, although the roots had been loosened a little by the use of a spade during summer.

This experience is not in conformity with that recorded in the *Manual of Conifers* (Veitch's), where the Japanese species is described as slower growing than *L. europæa*. It may be added, however, that in these nurseries, *L. leptolepis* does grow rather more slowly during the first year, but the gain afterwards much more than balances this. The Japanese species completes its growth and ripens off about three weeks earlier than the common species, and the shoots become of a golden Gut, giving a plantation of them an attractive appearance. Mr. Massie wonders

A MORNING WITH EDINBURGH'S HEAD GARDENER.

I found Mr. J. W. McHattie, Head Gardener to the City of Edinburgh, in his office in the City Chambers. This building is in the older and more interesting portion of the city, and as many readers are doubtless aware, is peculiarly separated from the newer town by the Castle and its falling grounds, Princess Street Gardens, &c.

Mr. McHattie, who is another of the former Calendar writers for the *Gardeners' Chronicle*, welcomed me warmly, and showed me several of the gardens under his charge, at the same time giving me information upon the whole of the parks and gardens belonging to the city. Speaking roughly, there is an area of upwards of 600 acres, but it is made up of nearly thirty places. Some of the largest of these are the East and West Meadows, in old Edinburgh, 63 acres; Blackford Hill, 95 acres, a recreation ground chiefly; Inverleith Park, 61 acres, in which are the glasshouses for cultivating plants for the gardens; the Braid Hills, 156 acres, affording some good golf courses; New Park, Portobello, 55 acres; Bruntsfield Links, 35 acres; The Calton Hill, 23 acres;

DE BIEVE, Chef de Culture of the Royal Château at Laeken (*spec. acclimatata*); for *Lælia præstans* Cattleya aurea, from the same exhibitor (*à l'annuité*); for *Pteris Childsii*, from M. L. DESMET DIVIER; and for *Odontoglossum grande* var. *aureum* Panwelsii, from M. TH. PAWELLS (*à l'annuité*). A Certificate for Flowering was allotted to M. VERROUX for *Oncidium Westworthianum*.

A FINE TREE OF THE SALWAY PEACH.

WE are indebted to Mr. F. Perkins, of Leamington, for the opportunity of figuring an abundantly fruitful specimen of this variety. In very warm seasons the Salway Peach produces excellent fruit on south and west walls in the Southern parts of England, ripening taking place in the early part of October, whereas in other positions and aspects the fruit is of poor quality. As the late Mr. Rivers grew it in cold pits facing south, close up to the lights, the fruit was of nice quality almost every year, and also in his fruit-houses as a pot tree. The fruit is large, globular, flesh a lively yellow; skin tough, golden-

and the Princes Street Gardens, 37 acres. There are several golf courses, and smaller areas devoted to the good out-door game of bowling, so popular with Scotsmen. Edinburgh's needs are not like those of Glasgow. The former city is less congested, has fewer industrial citizens, and hence there are no People's Palaces or Winter Gardens. In Edinburgh the parks are maintained chiefly for recreation, and they contain nothing to compare with the collections of plants in the Camp Hill Gardens, Glasgow, or indeed with those in most of the parks there. Exception must, of course, be made of the Princes Street Gardens, which are so glorious a feature of the city. These are pleasure-grounds, and are brightened by numerous beds of showy flowers. But they were capable of improvement, and since my visit there some necessary alterations have been made in them by Mr. McHattie for the purpose of providing better colour effects, and for securing a rearrangement of some of the flower-beds, which were not in the best positions available. The new city gardener rightly feels that in the case of ribbon-borders, his hands would be less free to provide different floral effects each season. This can be done more satisfactorily with beds of medium size that may be planted in many different methods, and filled with alternating species of plants.

The western portion of the gardens required a greater amount of colour imparted to them. I have already mentioned the Inverleith Park. The entrance to this is close to one of the entrances to the Royal Botanic Gardens, whence an avenue through the Inverleith Park is an attractive feature.

The Waverley Garden is really an instance of roof-gardening, but it has not all the disadvantages such sites usually possess, because the roof of the old Waverley Market is level with the street. In other respects it is much the same, there is little space for soil, and drainage needs to be provided similarly to that of other roof-gardens. Mr. McHattie will make an effort to secure a better effect by experimenting with different species of plants to put in the artificial beds and large vases, &c. Those that have hitherto been used have not been so effective as could be wished, and at the same time they have not withstood the trying conditions of the site perfectly.

Before taking my leave of Mr. McHattie, he very kindly conducted me over the City Chambers, into the Museums and "Burn's Room," where a loquacious guide treated us to some well-worn stories; to the fine old Castle, in front of which a regiment of Highlanders were performing their morning drill; to the grand, undecorated interior of the historic building St. Giles' Cathedral; and to the "Heart of Midlothian" worked in big pebbles in one of the city streets, supposedly the exact centre of the classic county; besides which he showed me many interesting relics in the history of the hold, Scottish race. P.

(To be continued.)

PLANT PORTRAITS.

CHRYSANTHEMUM MME. GEORGES MAZAYER (Nonin).—A large-flowered Japanese variety, with creamy-white linear-pointed florets. The habit is dwarf. It flowers at the end of October.—*Revue de l'Horticulture Belge*, December.

ODONTOGLOSSUM WILKESIANUM, Kuhn, f. in *Gard. Chron.*, 1880, 228.—*Garden Flora*, December, tab. 1103.

ROSA LEVIGATA VAR. ANEMOSE.—A lovely large-flowered single Rose, with rose-pink flowers.—*Revue Horticult.*, Dec. 3.

ROSA MACRANTHA.—A supposed hybrid between *R. gallica* and *R. canina*, with large white flowers.—*Revue Horticult.*, Dec. 1.

TACCA CHANTREPI, SP. NOV., Malaya, Ed. Andrie.—*Revue Horticult.*, Dec. 3.

MARKET GARDENING.

PEACH HOUSES.

THOSE who intend to cultivate Peaches and Nectarines under glass for commercial purposes, should place the work of building in the hands of a trustworthy firm having a good reputation for the erection of glasshouses for market purposes. The recommendation of a builder of this sort as to the most suitable kind of house or range of houses for any given purpose, may be accepted with the certainty that it will give satisfaction. The side and end walls should rest on solid foundations, as should likewise two tanks running across the houses, this work being proceeded with whilst the framework, light, &c., are being made. For the information of readers of the *Gardeners' Chronicle* who, though lacking practical experience, may wish to do the work themselves, I will briefly describe the sort of house or houses which will possess durability, cheapness and suitability.

Houses from 16 to 24 feet wide, having rafters from 10 to 15 feet long, and any length from 50 to 300 feet, will answer the purpose of Peach-growing admirably, the length of such houses being governed by circumstances. Where several ranges of houses can be constructed at the same time for the production of fruit, &c., requiring the same atmospheric temperature, a great saving in the matter of materials and labour is effected by erecting the several structures on valley gutters supported by 9-inch brick piers built at about 8 feet apart, these piers being on the same level as the two outside, side, and end walls, the latter being about 2 feet high from the floor-line. Ventilating-boxes should be built in the side walls at intervals of 7 or 8 ft. The latter should in thickness be the width of a brick, viz., 4½ inches, with 9-inch piers built thereon at intervals of 8 feet, 4½ inches of the individual piers showing on the outside in order to support the 4½-inch wall against lateral pressure; the piers being, therefore, flush with the brickwork inside. Squares of glass 18 inches wide and 22 inches long, and 21 oz. to the square foot, should be used in covering in the houses; this being embedded in best whitelead putty and secured on the top with brass sprigs, four to each pane, allowing a lap of ½-inch in glazing. A trellis consisting of No. 14 galvanised wire fixed at about 1 foot from the glass, and allowing a space of 6 inches between the wire. Having contributed articles on the construction of a glasshouse for market purposes in the *Gardeners' Chronicle* for February 2, and on the construction of trellises in glasshouses so late as March 30 in the present year, I need not touch further on these matters now, but refer those whom it may concern to the numbers of this journal mentioned above, and to say that from four to six 4-inch hot-water pipes should be fixed in each house according to its width.

PLANTING THE TREES.

Assuming the houses to be erected on land of ordinary fertility, all that is necessary is to excavate the holes in semi-circular form 3 to 4 feet in the lower diameter, and about 18 to 24 inches deep, the bottom being broken up, returning some of the soil, and incorporating short manure therewith before the planting is proceeded with. Spread on the roots over the soil in the bottom of the hole, the bottom being slightly convex in outline, and cover them with good soil to the depth of 6 inches; mulch with half-rotted dung, making allowance for the loose soil, and for

the trees subsiding about 3 inches. The trees should stand at 15 feet apart, the intervening spaces being utilised for growing Tomatos, until the trees cover the whole of the trellis. Trees grown on the extension method will do this in two or three years from the time of planting.

In referring to the construction of Peach-houses, I omitted to say that span-roofed houses should run north and south; lean-to's facing, as a matter of course, due south or south-west, as the case may be.

VARIETIES.

The right varieties to plant are Early Alexander, Waterloo, Amsden June, and Hale's Early Peaches, for early ripening with gentle forcing. These fruits command high prices in the market. To succeed these, plant Dagmar, Early Grosse Mignonne, Crimson Galande, and Dymond. Of Nectarines, Cardinal, Early Rivers, and Pine-apple, may be relied upon for making good returns. The trees should not be tied in position before the end of January, neither should they be pruned. I will contribute a short article on the subject in due time. H. W. Ward.

WINTER-FLOWERING BEGONIAS.

The magnificent Begonias now in full bloom at Messrs. J. Veitch & Son's Nurseries, Feltham, are not from retarded tubers, like the Liliams, Lilies of the Valley, Spireas, Azaleas, and other plants remarkable for their beautiful flowers at the Aquarium Show of Chrysanthemums, which were produced by plants which had been subjected to the process of retarding by means of low temperature. They are simply the result of skilful cultivation, and anyone having good greenhouse accommodation may enjoy their lovely flowers at this time of the year, and for a couple of months longer if the right species and varieties be selected, and proper attention is given to them. In the first instance it may be interesting to state that all of them are hybrids of first or second degree from *B. secotrana*, a lovely species introduced into our gardens by Messrs. J. Veitch & Sons some twenty years ago, and one which possesses the great advantage of flowering naturally in midwinter. Unfortunately this most distinct plant is of a somewhat capricious behaviour, and on that account has not met with the general cultivation which it deserves, and is seldom seen in first-class condition. The same drawback, however, does not apply to the several varieties resulting from the crossings which have been made with some varieties of the popular tuberous-rooted species. In Begonias, as in the generality of hybrids produced by crossing distinct species, and notably Orchids and Nepenthes, the offsprings are endowed with much greater vigour than their respective parents. This one reason undoubtedly accounts in part for the robust appearance of the plants grown at Feltham, and a skilful culture, such as the one directed by a grower of Mr. John Heal's experience, accounts for the rest. Be this as it may, it is an indisputable fact that the splendid winter-flowering Begonias make at the present time a magnificent show which, if we take into account the innumerable quantity of flower-buds in various stages of development still on the plants, is most likely to last a couple of months longer and bring us well into the new year. There are close upon a dozen varieties of these useful plants already in commerce, and if there are no white, yellow, or blue forms, on the other hand one may see and admire among

them all the various tints and shades from pale pink to dark crimson, red and bright scarlet. Although three or four of these have quite single flowers, the majority produce double or semi-double flowers, and this is a certain advantage, inasmuch as in nearly all classes of plants a double or semi-double flower possesses the faculty of remaining longer on the plant than a single one. It may be of some interest to recall here the fact that the first of these hybrids, "John Heal" by name, was the result of a cross between *B. socotrana* and a crimson-coloured variety of the tuberous section, called Viscountess Doneraile, and also that as a seed-bearing parent *B. socotrana* has only produced John Heal, Winter Gem, with flowers of a deep crimson colour, with *socotrana* foliage, and Gloire de Lorraine, which at Feltham was the result of a cross between that interesting species and *B. Moonlight*; whereas, the original *B. Gloire de Lorraine* de Lemoine was given as the result of a cross between *socotrana* and, I believe, *B. Drogéana*.

But if the offspring of *B. socotrana* as the female parent are few in number, those re-sulting from crosses in which that species was used as pollen parent are numerous, and also varied in colours. There are Myra, Mrs. Heal, and Winter Cheer, all three very bright rich red, large flowers, those of Mrs. Heal measuring fully 3 inches in diameter. The seed-bearing plant in this case was an orange-scarlet variety of the tuberous section. A semi-double flowering variety of the tuberous section, with rose-coloured flowers, acted as the female parent which produced Ensign, a double bright pink variety, so free-flowering that seventy to eighty flowers and buds have been counted on plants 18 inches high, and grown in 32-pots. Winter Perfection, a variety of somewhat dwarf habit, with double, pink flowers, disposed on well-branched racemes, and with fine, dark, shining foliage; and the remarkably pretty Ideala (see fig. 121 in our last issue), a particularly dwarf variety, with double flowers of a deep, rich rosy-pink colour, and disposed on racemes showing well above the foliage. In Venus we have a very fine semi-double variety, with bright red flowers, issued from a crimson-flowered tuberous form crossed with *B. socotrana*. But one of the most distinct of all that section is undoubtedly Julius, the result of a cross between a white-flowering variety of the tuberous section and *B. socotrana*. It is thoroughly distinct from all others, and its flowers, which are produced in great abundance, greatly resemble flowers of the justly popular double-flowered pink Oleander, in colour and shape, as well as in size of its very attractive flowers.

The only hybrid of the second degree known with certitude to this day is the variety Adonis, which is the result of a cross effected between an orange scarlet form of the tuberous section, and John Heal, already an hybrid from *B. socotrana*.

As to the duration of the flowering season of the plants belonging to this interesting section, the reader may draw his or her own conclusions from the fact that the plants above described and now in full perfection at Messrs. J. Veitch & Son's Nurseries, Feltham, have been exhibited two or three times this season at the Drill Hall, in which locality flowering plants do not improve. That any one may easily grow these plants is made sufficiently clear by the fact that they do not require a high stove temperature at any time, and that many of the plants now in flower were raised from cuttings struck in August last, and those of course, are only single shoots in 60-pots, but they each bear a spike of their lovely flowers, and measure only 8 inches to 9 inches

high, whereas the one-year and two-year-old plants which are grown in pots 5 to 7 inches across are bushy specimens 18 to 22 inches high, and produce flowers in great abundance. It may be stated here that it is of the utmost importance to insure thorough success, that the plants should be kept perfectly clean and free from injurious insects, and especially of those of a little yellow thrips which shows a great partiality towards their succulent foliage, but which may easily be kept off by careful attention and occasional fumigations, which should be of a light character and somewhat frequent during the period of growth of the plants, that is, from May to November. *J. Schneider*.

PLANT NOTES.

PHACELIA PARRYI.

THE genus *Phacelia* includes some effective decorative plants, and *P. Parryi* is one of them. The flower is of an intensely deep violet hue; the corolla is about 1 inch in width; and they are numerous produced in cymes from early summer till early autumn. The leaves are slightly hairy on both surfaces, and viscid. The plant rarely exceeds 1 foot in height; it is a native of California, and should be grown in warm sunny positions, and a well drained soil. There is a white variety, but it is not so effective as the type.

TRIDAX TRIBOATA.

Those readers of the *Gardeners' Chronicle* who may be in search of useful subjects as cut flowers, will find in this Mexican annual a plant worth of attention. The flowers are of medium size, say not more than 1½ inch diameter, the colour rich orange, with a slight reddish colouring at the base of the florets, almost forming a circle. The plant attains 2½ feet high, and flowers from July to October. Another kind, *T. bicolor* var. *rosea*, is also worthy of remark. *E. J.*

BULB GARDEN.

CRINUMS FOR THE OPEN GROUND.

I WAS pleased to read the article on *Crinum*, *Gardeners' Chronicle*, December 7, p. 118. [Erroneously attributed to Mr. Worsley, Esq.] There is no doubt that some of the species now given stove treatment would thrive better in the warm greenhouse, while others could be grown in unheated houses. With regard to *Crinum longifolium*, *C. Powellii*, and *C. Moorei*, however, there is no doubt that they are as hardy for the open garden if properly planted, as most of the other bulbs regarded as permanent garden plants. In the matter of *Crinum Powellii*, raised by Mr. C. B. Powell, now of the Old Hall, Southborough, Tambridge Wells, and then of Bury St. Edmunds, it was raised as a hardy plant, the young plants being planted in the open garden, and not the slightest protection was ever given them during the time they were developing. In a few years the stock was a large one, and the bulbs were of immense size. At length the surplus stock was distributed, and I know of several gardens where they have been outdoors ever since that time. Here, with me, at Harrow, in three different aspects, and in the stiff, heavy clay, it is one of the hardiest of bulbs. I never lost one, and the plants flower well and regularly.

Crinum Moorei calls to my mind many curious experiences with regard to this much named bulb. My first experience of it was finding a

row of a very fine *Crinum* blooming splendidly, close to a wall in the excellent garden of the late Sigismund Rucker, at West Hill, Wandsworth. Examination seemed to show that it was the same species as I had under glass, named *Crinum ornatum africanum*, but with flowers far superior to any I had seen under glass. Mr. Rucker was kind enough to say he would give me three or four "provided we can get them up." Thereupon the late Mr. Pilcher, his gardener, sent a man for a spade and a pickaxe (implements one would hardly expect to be required to take up stove-plants which had been growing outdoors for years), and the task of getting up the bulbs commenced. The bases of the bulbs were from 3 to 1 feet below the surface, and the roots had run under the foundation of the wall. The bulbs were in clumps, and so firmly wedged together that none could be got up without breaking off all, or a large portion of the root-crown. Later comparison proved its identity with *C. ornatum africanum*, *lort.*, which in its turn appeared as a new species—*C. Makoyanum*, and again as *C. Mackenii*. It is also known as *C. Colensoi*, *C. natalense*, *C. Schmidtii*, and *C. Macowanii*; although how the plant in gardens compares with the type of the last-named specimen, I I cannot say. *Crinum Moorei* is the accepted name, and a fine full-page illustration of a specimen, under this name, having for a background a wall covered with *Cattleya citrina* in flower was given in the *Gardeners' Chronicle*, October 22, 1887, p. 199. The view was taken in the gardens of Sir Chas. W. Strickland, Bart., Hildenley, Malton, Yorks, an enthusiast in bulbous plants.

Planted deep, even the tips of the leaf-forming portion of the bulb beneath the soil, and for preference close to the foot of a wall, or in some other situation where they will not be disturbed for many years, these *Crinums*, and probably many others, are quite hardy for the open garden; and that fact considerably enhances their value, for there are far more people having gardens than there are who have greenhouses. In the gardens of Sir Trevor Lawrence, Bart., at Burford, a large number of *C. Powellii* and *C. Moorei* have been growing in the open garden for years.

I am sure that many other African bulbs would be perfectly hardy and satisfactory garden plants, but the habit of growing at the wrong season for our climate renders them more difficult to acclimatise than some other plants.

CRINUM CRASSIPES.

The type specimen of this grand *Crinum*, mentioned at p. 118, and which afterwards flowered with Sir Chas. W. Strickland, and was then named by Mr. Baker, appeared with me, but I could never determine whether it was imported or was the result of some cross made by me and not recorded. It seemed to me to have some of the characters of *C. amabile*, or its ally, *C. angustum*, *James O'Brien*.

COLONIAL NOTES.

CASSIA GLANDULOSA.

THE flowers of this beautiful dwarf *Cassia* are pale yellow, contrasted to a pleasing degree with the red colouring of three of its stamens. Very similar in appearance to the labellum of some species of *Oncidium* is the lower petal. Animals are fond of browsing on the plant, the woolly portions of which are brittle. Around the coast region of this Island it is a constant companion to the wild vegetation. The pinnate leaves are delicately constructed, each leaflet ending in a hair-like

point, and the parallel veins are extremely fine in texture.

BOURBERIA SCUTELLATA.

A small tree, inhabiting the seaboard localities in Grenada, producing white, fragrant flowers, which, in turn, are replaced by yellow, showy fruit, and may thus fall under the head of "berried plants." The honey-bee is attracted to the blossoms. Like most Boraginaceous plants, the leaves are rough to the touch, especially the upper surface.

DIORANTY PLENIOR.

We have two forms of this beautiful shrubby tree, white and lilac, under cultivation in Grenada. Now the lilac-coloured one is fruiting in abundance, and its yellow fruit form a striking appearance among shrubs during August and September. The purplish corolla has upon each of its two upper petals a distinctive upright line. In number the fruit run from seven to ten, and slightly more for the particular plant under observation. As a "berried" plant, and flowering shrub, it is worth a place in a plant collection of tropical gardens. It takes hard cutting-in after the fruiting time is over. The leaves are comparatively small.

CORDIA CYLINDRISTACHYA (BLACK SAGE).

This Cordia is a common shrub on the lowlands of Grenada. Its flowers are white, and grow in spikes. Owing to the very rough leaves, small branches are picked and formed into a small brush-like arrangement, and are thus used by grooms when bathing horses, Sunday being an especially favourable day, scores of horses are taken to the seashore of this parish (St. George's), and undergo a thorough scouring in the water by means of the sprigs of the Black Sage plant. In this-wise we look upon it as an invaluable shrub. For cobwebbing purposes it is also suitably adapted. *W. E. Bromley, Grenada.*

FRUIT REGISTER.

THE MORELLO CHERRY.

It is time that some gardeners at least broke away from the time-worn dictum that the Morello Cherry should be planted on walls having the coldest aspect. It may be advisable to lengthen out the Cherry season by thus planting them where the sun never reaches them, and the fruit is intensely acid, and with delicately made sweet enough to eat in tarts, &c.; but why put the entire stock of Morello Cherry-trees on such an unfavourable aspect? Are gardeners like sheep, bound to jump through exactly the same gap in the hedge in follow-my-leader fashion? When surveying garden practice it would seem that this is the case, and yet within certain limits practices may be greatly varied. Every aspect should be made use of for this useful Cherry, with the result that fruit would be obtainable early as well as late, and with a great gain in point of flavour.

In large gardens I would advise the planting of half-standard Morello Cherry-trees (6 feet stems) on the borders lining the walks, and in lines across the vegetable quarters. These trees bear late, the fruits are well-flavoured, and it is an easy matter to protect them from the birds by netting. The variety Belle Magagnifique, a light red-coloured Cherry, with the characteristics of a Morello, is most prolific grown in this fashion. The trees form pendulous, round-shaped heads, ornamental at any season. *M.*

HOME CORRESPONDENCE.

VIOLETS.—Your correspondent, "B. L.," in his inquiry as to the cause of the arrested flowering of his plants does not say anything about the soil in which he grows them, but possibly it is in the soil that the fault lies, more particularly as he says previous gardeners have also been unable to flower the Violet in frames. That soils in gardens only a mile or two apart vary considerably in their constituents I have had ample evidence since living in Devonshire. Although "B. L.'s" plants have been growing in the same garden, and I assume a similar soil placed in the frames for them, I would suggest that in future he makes a compost for his Violets of soil obtained from a distance, if only to the extent of half the quantity needed. For several seasons after coming to Poltimore Park, I was puzzled at the behaviour of many kinds of plants that were grown in the summer in the open ground, when lifted and transplanted, in their refusing to grow away vigorously afterwards. I attributed this to some particular substance in the soil, which the plants at first, after removal, were unable to assimilate, and thus caused arrest of growth for a time. My experience does not apply only to Violets, but to other plants of greater duration, some of which would remain for three years without making much growth, but eventually they have grown away stronger than before. *T. H. Stale.*

MANUFACTURE OF CONFUSION.—Reverting to this topic, I consider the remarks of Dr. Bonavia, p. 343, on "Dahlias Brema and Loreley," are scarcely accurate, for in my opinion both varieties are distinct enough to warrant the application of separate names. Both are continental varieties, and of both varieties I understand that one of the parents was Mr. Ware's D. delicata, which is a weak grower, and has very short flower-stalks, otherwise a beautiful flower. Brema, although not always a perfect Cactus Dahlia, is much more vigorous, blooming early and late, and has the beautiful colouring rarely seen in D. delicata. Apart from growth, I consider the variety Brema one of the brightest coloured. The variety Loreley is simply an improvement on the older D. delicata, with more vigour and better and longer stalks, which carry the flowers well above the foliage. The other Dahlia, Miss Grace Cook, is unknown to me. I cannot believe that many varieties are kept by nurserymen merely to swell their catalogues, but solely for the reason that when once known they are continually being asked for. In the firm with which I am connected, a great many varieties of Dahlias, Iris, Narcissus, &c. are being discarded, and only the best and most distinct retained. *G. Reuther.*

THE ASPECT OF A SPAN-ROOFED GLASSHOUSE.—My experience of glasshouses that run east and west is that these are quite satisfactory for plant culture. We have here several such houses. One of these houses is utilised for growing *Souvenir de la Malmaison* Carnations, and it measures 40 feet by 20 feet, and another is being built having the same aspect. The ventilators of these houses are placed on both sides of house at the top and bottom, and neither red-spider nor other insect pests give trouble. The plants which stand on the north side of the house flower at the same time as those on the south side. I entirely agree with Mr. Divers' opinion, that the north to south aspect for fruit culture is preferable. *William Wallace.*

"SLEEPERS" FOR INDIAN RAILWAYS.—The principal woods employed in India are *Xylia dolabriformis*, *Tectona grandis*, *Teak*; *Shorea robusta*, *Sal*; *Cedrus Deodara*, *Deodar*, *Scotch Pine* *creosotes* is imported from the Baltic; other woods are made use of, but in smaller quantities. *W. Schlich.*

YOUR GARDEN MAY KILL YOU.—May I contribute my mite in verification of the statement contained under the above heading in the *Gardeners' Chronicle*, p. 390, by showing how

true it was in my case, notwithstanding the depreciation by many of the so-called facts when brought to light. In the early autumn of last year, while in the usual course of my work, I was staking and tying plants, using Bamboo canes, and with the point of one of these I had the misfortune to prick my right hand under the fleshy part of the thumb. The point that caused the wound had previously been in the "soil about 2 inches deep." The wound, a mere scratch although somewhat deep, bled profusely, and practically closed the same night. From the soil on the point of the stake I contracted tetanus germs, and I lockjaw set in within forty-eight hours. I underwent one of the most painful and extraordinary illnesses any ordinary human being could possibly go through. The limbs, instead of being bent or folded, were twisted like a screw. The body seemed as if in a net, with the meshes steadily tightening, particularly about the throat and chest, as if the life was being twisted and pressed out of the body. Thanks to skillful treatment and the scientific use of Pasteur's "Serum Antitetanique" by injection on different parts of the body, I am now well and strong as anyone would wish to be connected with gardening. I have a great deal to be thankful for, particularly that my life has been spared, with my limbs intact, that I may be able to follow my calling I hope for many years to come. *James Machar.*

BOUSSINGAULTIA BASELLOIDES.—Several short notes on this rampant climber have appeared lately in these pages, but fortunately they have in no case been particularly appreciative. I say fortunately, because I think any encouragement to grow this plant is to be deprecated. My experience of it leads me to consider it a worthless subject for culture, either under glass or in the open. It is, as some correspondents have remarked, perfectly hardy, shooting up strongly from the base in the late spring, after being cut down by the first hard frost, and making growths 15 feet or more in length during the summer. It often refuses to flower in the open, especially if growing against a tree-trunk, where it lacks the heat thrown off from a southern wall, but its flowers are so inconspicuous as to be almost a negligible quantity, and can in no way compare for effect with the blossoms of many hardy climbers that increase in beauty from year to year. Many of the *Clematis* family, such as *C. montana*, *C. flammula*, *C. graveolens*, and *C. balcarica* in the south-west, are infinitely preferable for garlanding with beauty the trunks of old and decrepit trees; and in the same favoured district the climbing *Hydrangea* presents a striking picture when swathing the columnar stem of a giant Oak to the height of 20 feet with flower and foliage, while plants that can only be used in the English climate as annuals, like *Cobaea scandens*, afford a far more pleasing summer picture; and for nobility of foliage the Dutchman's Pipe (*Aristolochia Siphon*) is infinitely its superior. If this disparaging estimate of *Boussingaultia baselloides* as an open air plant is warranted, the case against it is still stronger as a subject for culture under glass, where it merely takes up room that might more worthily be filled by numerous handsome flowering climbers that need but glass shelter to attain the fullest perfection of beauty. *S. W. F.*

LATE-CROPPING PEAS.—I have always been interested in culinary Peas. Mr. Wythes, at p. 288, mentions several varieties, with which most gardeners are acquainted; also Mr. W. J. Snel, p. 120. The latter does not mention Carter's Michaelmas Pea. I should like to say that this Pea is much liked by my employer, and I was enabled to pick regularly from it till the frost came in November, whilst all other varieties had long ceased to bear. The haulm is sturdy, and about 2½ feet in height, and pods commence to form when it is about 1 foot high. The plant is less liable to suffer from mildew than some other varieties. I agree with all that has been written concerning the merits of Autocrat, Cheltenham,

Ne Plus Ultra, and British Queen. I have had good gatherings of pods of Chelsea Gem in the month of October, but it does not crop to the same extent as the larger-podded varieties. *W. A. Cook, Compton Bassett.*

— One of our finest late Peas, which has the pods long, green, slightly scimitar-shaped, and filled well with Peas of good colour and fine flavour, is The Gladstone. It grows in height according to quality of ground from 3 to 4 feet, and is a heavy cropper. Those who want late Peas for exhibition, will find it superior to even Autoerast. Sharpe's Queen too is a fine late Green Pea, pods long and handsome, and for quality difficult to beat; that is of the same height as the preceding. What with these, Autoerast, Late Queen, and Michaelmas, we have no lack of fine late Peas, of medium height, that will do well in any garden if the position be not a hot one, and the soil is trenched deeply, manured low down, and be well mulched and watered. Gentle sprays with weak Bordeaux Mixture are wonderfully helpful to Peas in resisting attacks of mildew. One other essential to success is that the seeds be thinly sown. Too thick sowing proves later to be the ruin of many promising rows. *A. D.*

THE WEATHER AND THE RAINFALL.—While in the northern and midland counties heavy rains have fallen, in the west and south the weather has been unusually dry. It is rare that we have in this part of Devonshire such severe frosts as have occurred during the past six weeks, namely 5 to 21 of frost, but without injury to vegetation. The rainfall at Baltimore up to December 6 was less than that of last year by 10½ inches, and the weather continues dry. The earth is so dry and hard that the lifting and transplanting of trees and shrubs are being generally delayed in consequence. *T. H. Slade.*

ARCTOTIS GRANDIS.—Is Mr. T. H. Slade, p. 43, quite accurate in describing this plant as "a nice addition to herbaceous perennials?" Even should it give promise of a true perennial in the open garden at Exeter, it will be welcome news, while the majority will, I believe, secure the best results by regarding the plant as being more suitably treated as a biennial. Under glass the plant may be perennial; but for the flower garden, seeds will be found the simpler way of raising a stock of the plant. Those, however, who possess old plants that have flowered well in the open this year may be enabled to raise plants from cuttings inserted and treated in the same manner as Gazanias. Cuttings will not be procurable in great numbers, and dependence must be had on seeds, which if sown early will be more convenient. It is a plant suited to the hottest spot in the garden. *E. Jenkins.*

ROMAN HYACINTHS.—I do not know if it is general this year that Roman Hyacinths are finer than usual, a fact that may be due to the season, when growth was being made exceptionally favourable. The growth of these bulbs is very regular, and the flower-shafts seem to emerge from the bulbs all at once, and they are fine both in size of spike and of the individual flowers. *W. A. Cook.*

LILAC-FORCING.—The flower-spikes of the Lilac are much admired in the winter for home decoration, and gardeners who may have plants in the shrubberies or the home nursery well set with flower-buds may pot or tub them in stitish soil, and force them into flower. They need no special preparation, and may even be placed on beds of soil in the Mushroom-house, or any other warm place. The plant starts well in darkness, and is not long in starting into growth anywhere it afforded a warmth of 60°. Plants forced in darkness have white flowers; exposed to light, Lilac-flowers last in good condition for a very long time, if suitably hardened off when taken from the forcing-house. Most of the varieties may be forced, but not to the same degree of perfection, and the common Persian Lilac is the

earliest. When Lilac-bushes have been forced, and they are to be kept for planting-out in the garden, they should undergo a long period of hardening off before being exposed in the spring to the weather, otherwise the young shoots get much injured by frost. *W. A. Cook.*

GRAPE SYNONYMS.—Whilst Mr. Kirke is correct in saying that there is no Royal Horticultural or other authoritative list of Grape synonyms, it may be worth reminding him that it would be difficult to formulate a more authoritative list or guide than is Mr. A. F. Barron's *Vines and Vine Culture*, of which every young or old Grape-grower should obtain a copy, because in that book, in the most impartial and concise way, is described each known Grape and its synonyms. If it be said that such a book is not authoritative, so might it be said of any list issued by the Royal Horticultural Society, as that body has no power to impose its decisions on to other societies. Still, there is generally very cheerful willingness to accept such decisions as morally binding. But even did the Council of the Royal Horticultural Society undertake what Mr. Kirke suggests, it is probable that such list would be largely a reproduction of the synonyms which Mr. Barron has so ably arranged in his book, because such information was gathered during the many years that the author controlled Chiswick Gardens, and was the responsible Superintendent of the Society. Thus his classifications are practically those of the Society. It is interesting to note in the book that so popular a Grape as Alicante has six synonyms, Black Morocco six, Muscat of Alexandria ten, Muscat Hamburg four, Black Hamburg fourteen, and many others have two or more. I fear the proposal to send out circulars asking for a synonym election would result in confusion, especially that to very few men, however capable Grape-growers, has it been possible to obtain the wide knowledge which Mr. Barron had. An election of a specified number of the best and most servicable of black and white Grapes would, as I previously suggested, be useful, and to which, so far, Mr. Ward alone has responded. Surely there are myriads of Grape-growing readers of the *Gardener's Chronicle* who have opinions on the subject. *A. D.*

CARNATION (p. 405). In "E.S.'s" good account of the name, he has omitted Turner's account in 1658: "Etonia ad illis sine coronaria, . . . est herba quæ vernacula lingua Vocatur a Gelofer, aut a Glowgelofer aut a Incarnatus." From this I conclude that the first name was from "corona," but that the colour suggested the prettier name of "Carnation," which was subsequently near the old name, and soon became popular. *H. S. E.*

MAGNIFICENT AND PICTURESQUE HORSE-CHESTNUT TREES.—It may be worth recording that at Nocton Hall, the seat of John Hodgson, Esq., near Lincoln, there stood two of the largest Horse-Chestnut trees in Britain. Recently the larger of the two, whose branches, if not quite, nearly touched the east-end window of the parish church, was cut down, and the diameter of the bole was found to measure 6 feet 2 inches, and to be nearly sound. The height of this tree was about 70 feet, and the space occupied by the spread of the branches measured about 100 yards in circumference, about the space covered by the tree still standing. The huge branches were supported by props, which gave them somewhat the appearance of a Banyan-tree. The one cut down had about, I believe, 130 props. The tree left standing has one limb which extends 90 feet from the bole; a tree in itself. *J. Small, Farley Hall Gardens, Olley.*

ASTER GRANDIFLORUS.—In a short note (p. 313) this Aster is spoken of as a "fall-growing form." From personal experience, gathered both in my own and neighboring gardens, I should say that such a description is totally inapplicable to this handsome Michaelmas Daisy. Indeed, in comparison

with such varieties as A. Novi-Belgii Robert Parker, which often exceeds 6 feet in height, it may almost be reckoned a dwarf form, since it rarely attains a greater height than from 2 to 3 feet. As regards the size of its individual flowers, its specific name is well-merited, as these often exceed 2 inches in diameter, while the deep violet-purple of the rays is not approached by any other species. Its chief fault, at least for northern gardens, lies in the lateness of its blooming; for the first flowers rarely open before mid-October, and the zenith of its beauty is not reached until November is some days old. In warm situations, in the south-west, however, this late-flowering habit should prove no detriment to its culture, as frosts are rare until after its beauty has waned. Where danger from frost is apprehended, it may be carefully lifted and potted after the flower-buds are formed, when it will expand its blossoms under glass; while flower-stems that are cut after the first bloom has opened, and placed in water with the stem well slit up, perform the successional flowers, and form a charming indoor decoration. *S. W. F.*

ALYSSUM ARGENTEUM.—At this season, when ornamental foliage on the rock-heaps attracts notice, Alyssum argenteum seems to deserve its name. I have several plants, about 2 feet across, of which the dense twigs, not rising more than 6 inches from the surface, almost rival the whiteness of the silver variety of Thymus citriodorus. A. argenteum is a native of South-eastern Europe, quite hardy, and perennial, flowering with large panicles of tiny golden flowers from the middle of July onwards, and afterwards scattering its winged seeds, which come up in such profusion that I have sometimes tried to exterminate the whole stock; however, some always hide themselves and survive, and if a few of them are growing in favourable spots, and the ascending branches are cut off to encourage humble growth, the effect of the plants in winter is better than when they are in flower. *C. W. Dod, Edge Hall, Malpas, Dec. 8.*

SOCIETIES.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

DECEMBER 1. The second meeting of a series arranged to be held at the Reading College in connection with the above Association took place on the above date, when Mr. FORTY, gave a lecture on "Tomatoes." There was a good attendance of members, presided over by Mr. NEAVE. Being referred to the varieties that had been introduced, since the large red Balaun was commonly grown, and Suffolk's Winter Beauty was offered, the lecturer passed on to deal with cultivation in regard to sowing the seed, soil, potting, fertilising, the removal of leaves, open air cultivation, growing for market, fungic diseases, and insect pests. Many questions were asked, and an interesting discussion ensued.

BINFIELD AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

DECEMBER 1. The 9th of the fortnightly meeting was held on the above date at Mr. SHAW'S Rooms, Mr. BOWEN in the chair.

Mr. FORTY read an interesting and instructive paper on "Branzine Fungus Plant." A discussion ensued, in which several members took part.

Mr. PAVES exhibited a collection of Orchids, including Cypripedium, Oncidium, and Zygopetalum, and contributed some novel information concerning the cultivation of these plants.

Mr. BISS showed some capital plants of Chrysanthemum Souvenir de Petite Anne, and Beaumont Globe de Laotame, which were the subject of remark.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

DECEMBER 3. The usual fortnightly meeting was held at the "Sunflower" Temperance Hotel on the above date. Mr. W. J. SIMONS presided over a capital meeting. The preliminary business having been dis-

posed of a paper was read by Mr. A. W. WADE, of Colchester, on "Lilies." The paper dealt with the geographical distribution and habits of the different species of Lilies, their classification and characteristics, not forgetting their beautiful forms and colours. The cultivation of the Lily received little attention. Mr. Wade noted the commercial value of Lilies as shown by the various plantations of the bulbs from Japan, Bermuda, and elsewhere.

The interest in the lecture was enhanced by a large collection of paintings of Lilies, exhibited by Messrs. W. HARRIS and J. GREGORY.

The next meeting will be held on December 17, when a paper entitled, "London, its Life and Parks: Gardening Old and New," will be given by Mr. HARRISON DICK, of the *Journal of Horticulture*, J. Gregory, Hon. Sec.

BECKENHAM HORTICULTURAL.

DECEMBER 5.—Mr. H. G. COX, Hon. Sec., Reading and District Gardeners' Mutual Improvement Association, gave a pictorial lecture on "The Primula."

The lecturer commenced by illustrating the first Chinese Primula flowered in this country by a Mr. Palmer, of Broadley, Kent. Compared with the Primulas of to-day, it was a very poor specimen, consisting of one small tuft of flowers, resembling "Star" Primula. From its introduction, the audience were led up year by year to the present time. Types of Primula Sieboldi, P. Forbunda, and P. obconica were referred to, and splendid specimens illustrated. W. M.

CHESTER PAXTON.

DECEMBER 7.—The annual General Meeting of this Society was held in the Grosvenor Museum on the above date, Mr. N. F. BARNES, Eaton Hall Gardens, in the Chair. Mr. G. P. NICH, the Hon. Sec., submitted his accounts for the past year, which showed that a small profit balance had been carried forward, increasing the funds of the Society, at present in Park Road, to over £36. This would doubtless have been more had it not been for the very inclement weather that was experienced during both days of the Fruit and Chrysanthemum Exhibition at the Town Hall. Mr. Barnes's term of office having expired, a hearty vote of thanks was accorded to him for his valuable services in the past, and in replying, he proposed as his successor Mr. John Weaver, Christleton Hall, one of the oldest and most active members in the Society. The election of Mr. Weaver was unanimous, and in accepting office, he said he would endeavour to follow in the footsteps of his predecessors.

THE SMITHFIELD CLUB.

THE annual Christmas show of fat cattle, sheep, pigs, &c., at the Agricultural Hall, Islington, was held during the present week, and experts in these matters declared that it was sufficiently good to make sure of an excellent supply of English meat for consumption during the coming season.

The visitor to these annual shows, however, may see more than to the beasts themselves, for the enterprise of the seedsmen leads them to make huge displays of agricultural roots and grains in the gallery in the interest of the farmer and the seed buyer. It is natural, perhaps, that big catfish should have been on huge roots, and certainly the seedsmen make every effort to excel each other in the size of the roots they show. The roots are obtained from growers who happen to have the largest, but the seedsmen who display them are able to declare they have been grown from seeds which they have supplied, and generally have been cultivated purposely for them.

One of the most imposing displays on the recent occasion was, as usual, that of Messrs. SUTTON & SONS, Reading. The centre-piece was a heap of roots, reaching floor to ceiling, of the Mangold, Sutton's Prize-winner, an exceedingly heavy root of the "globe" type. Other Mangolds represented largely were Golden Globe, Crimson Tankard, Intermediate, and Oxheart. The heavy top roots were, as usual, Messrs. Sutton's, and a favourite in Scotland. On the estate of the Duke of Richmond and Gordon, at Gordon Castle, the variety has this year produced a crop of 6 tons, 17 cwt. 16 lb. to the acre. Crimson King and Champion were other Swedes represented. Among the Turnips the variety Centre, introduced by Messrs. Sutton last year was most conspicuous. The roots are very desirable, and for a Turnip, exceedingly pretty, having a russetted skin, suggestive of that of a Melon. It is a good cropper, having produced a yield of 22 tons 1 cwt. 2 lbs. per acre. Other varieties included Favourite, Perfection, Early Sheepsfoot, Imperial Green Globe, Purple Top Mammoth, and Pommerania. A collection of about a dozen varieties of P. Beans was shown, all of which are fine, and very good, and they were represented by the clean plants.

Messrs. JAS. CARVER & CO., High Holborn, invariably make a great show of roots. The Windsor Mangold is said to have a record this year of 24 tons to the acre!

and other varieties shown included Mammoth Long Red, Goldlander, Golden Tankard, Warden Yellow Globe, and The Carter, a new one. Kangaroo and Thorburn Elephant Swedes were to the front; also Imperial Green Kohli Babu, Turnips, &c. There were fine exhibits of Potatoes, Onions, and Carrots; also of seed-corn, &c. Messrs. Carter declare that they are making experiments in the selection of roots by chemical analysis—1. The specific gravity of the entire root; 2. The specific gravity of the juice of the flesh; 3. The percentage of water; 4. The quantity of saccharine matter and other digestible solids; 5. The quantity of indigestible dry matter—the object being to increase the nutritious, digestible portions, and decrease the amount of water and dry matter.

Messrs. WEBB & SONS, Stourbridge, made a display of Swedes, Mangolds, and Turnips. Their Mammoth Long Red, Yellow-fleshed Tankard, and Smithfield Globe Mangolds, were given especial prominence, also New Buffalo and Imperial Swedes, and New Invincible Turnip. The various grains, also Peas, Beans, &c., were represented by fine samples of seeds, and there were tubers of many of the more popular varieties of Potato. The handsome Challenge Cups offered by the firm at the fat stock shows at Edinburgh and Birmingham, gave a smart appearance to a very ornamental stand.

Messrs. FIDLER & SONS, Reading, had a great many varieties of Potatoes displayed, and gave special prominence to the varieties Up-to-date, Evergood, and Charles Fidler. Each of these comes very large, and affords a heavy yield to the grower. Fidler's Colossal is another of very large size. The collection included a representative list of varieties, from the first Ashleaf to the latest sorts. Peas and Beans from the same firm looked very good.

Mr. JOHN J. KING, Coggeshall, and Reading, made good shows of Mangels, showing Essex Prize Winner, Champion Orange, Mammoth, and Intermediate. In lesser quantities were shown White Globe Turnip, John Bull Swede, Imperial Green-lobed Turnip, and Red-rose Kohli Babu. There were also some samples of Grain and Potato-tubers.

Messrs. HARRISON & SONS, Leicester, showed a great variety in Peas, also some good Early Market and Intermediate Carrots. The roots of Early Market were about 3 inches long and very thick. Potatoes, Onions, Beet, Leeks, and Pars-nips, were also shown, in addition to a collection of Mangolds, Swedes, and Turnips.

Messrs. GARTON, Warrington, showed their new pedigree strains of Wheat, Oats, and Barley, including the Waverley Oat, especially recommended as an improvement upon most other varieties. The show of roots was small, and represented Green Top Yellow Turnips, Model Swede, and Yellow Mangold.

Mr. ALEXANDER BLAIR HOBBS, Coventry, showed Cheltenham Green Leaf Beet, a variety said not to bleed if broken before or during cooking; Marble Golden Top Turnip, English Wonder Pea, also Carrots, and other samples of produce especially designed for market growers.

Mr. E. W. KING, Coggeshall, had Prize-winner, Golden Tankard and other Mangolds, Turnips, Swedes, &c., also Peas, and varieties of grains.

Messrs. W. J. & B. BROWN, of Stamford, Peterborough, and Grantham, showed a collection of good varieties of Apples and Peas, and samples of trees of the same for present planting.

Mr. A. FINDLAY, Markinch, N.B., had a lot of Potatoes raised by himself, the most recent being one called Northern Star.

Messrs. W. HIGGINS & SONS, Chisle, Rochester, had a few choice Apples, including Allington Pippin, Cox's Orange Pippin, Charles Ross, &c., also young trees of same.

Cider manufacturers were in strong force. Messrs. GAMER & SON, the well-known Norfolk makers at Attleboro', had samples of their high-class bottle brand, The Pomona Cider Company, Hereford, had numerous samples, and recommend their Cider Pomone for winter use, described as a mullied Cider, having an admixture of Jamaica ginger.

Messrs. HENRY GORDON & SON, Juicee Cider Stores, Holborn, Hereford, in addition to Cider, showed a first-class Perry.

DEVON AND EXETER GARDENERS'.

THE fortnightly meeting was spent in witnessing a series of experiments on the artificial evaporation of fruit for preserving purposes, the lecturer and demonstrator being Mr. CHARLES BERRY, Lecturer on Horticulture to the Devon County Council.

Mr. BERRY prefaced his lecture by referring to the annual waste of Apples which took place in all parts of the country, but especially in Devonshire and Somerset, where orchards were numerous, and fruit being grown for cider-making. Instead of having to wait for cider of the wind-fallen Apples as the only means of turning them to good account, he urged that by the process of evaporation as then exhibited, they could be preserved for use throughout the year. In nearly all continental countries, and especially in America, fruit was dealt with in large quantities, to the advantage of the grower,

and of the community in general. Vegetables—Potatoes, Carrots, Parsnips, &c.—could also be preserved in a similar way; and he thought that in countries where transport was difficult, as at the present time in South Africa, armies might be fed on such vegetables and fruits, greatly to the benefit of the health of the troops, and at a comparatively small cost, when freight was taken into account.

In speaking of fruit-growing, he warned those who grew fruit for market against planting too many mid-season varieties, reminding them that no matter how good it was, its sale was handicapped by being confronted with the enormous quantity of Apples which in the West of England found their way into the markets between September and December. He advocated the planting of early Apples, to come in about August or early in September, and also those which came in from Christmas to Easter. His experiments were entirely successful, and created much interest among the members.

The friendly competition between the members for the best dish of cooking and of dessert Apples was won by Mr. Sidney Baker, gr. to Sir DUDLEY DICKWORTH at Kins, Barn, Wear, House, with Peasgood's Nonsuch and Cox's Orange Pippin, both varieties being very fine indeed. A. H.

THE PUTNEY, WANDSWORTH, AND DISTRICT CHRYSANTHEMUM.

DECEMBER 7.—The Annual Dinner was held on the above date at the Railway Hotel, Putney, Mr. D. JACKSON presided, and there were present some sixty persons, including Messrs. Mahood, R. P. Gledingham, John Heal, A. Rawlings (Treasurer), J. E. MeLend, C. Want, W. B. Young, and other officers and members of the Society. There is a balance of £21 in favour of the Society, and it is reported that at the next exhibition the Mayor of Wandsworth (W. J. Lancaster, Esq.) will offer a Silver Cup for competition among exhibitors in the borough.

Obituary.

MR. BENJAMIN JAMES, whose death is announced, had been in the employ of Messrs. Richard Smith & Co., of Worcester, for forty-five years, and was lately manager of the seed department. He was highly respected by those with whom he came in contact. He was buried on Monday last in the presence of a large number of relatives and friends, including representatives of the firm.

MARKETS.

COVENT GARDEN, DECEMBER 12.

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

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, home-grown, Warminster, per bushel...	6 0-10	Grapes, Gros Colmar, A. p. lb.	1 6-20
Blenheim's, per bushel...	5 0-8 0	— B., per lb.	0 1-0 2
Coax's, sieve...	1 0-8 0	Almeira, per bushel...	4 0
Nova Scotian, various, per barrel...	15 0-24 0	— Cox's, sieve...	11 0-7 6
Redious, per sieve...	2 6-4 0	Lemons, Murcia and Malaga, per case...	11 0-13 0
King Pippins, per bushel...	5 0-7 0	Melons, each...	0 3-1 3
— per bushel...	5 0-7 0	Oranges, Denia, per case...	9 0-11 0
— per bushel...	5 0-8 6	Jauca, per case...	9 0-9 6
Baanans, bunch...	7 0-10 0	— per case...	7 6-9 6
— loose, p. doz.	1 0-1 6	Tauzie rieur, per case...	1 0-7 0
Chickens, per bag...	6 0-5 0	Pears, in cases...	1 0-7 0
— per doz.	5 0-8 6	— (about Moroccan & Easter)	10 0-12 0
Crabapples, case...	11 0 0	— various, per dozen...	3 0-1 0
— per lb.	0 6	— stewing, per crate...	6 0-8 0
Custard Apples, per dozen...	6 0-9 0	Persimmons, per dozen...	2 0
Grapes, Muscats, home-grown, per lb., A.	2 6-3 0	Pines, each...	2 6-4 0
— B., per lb.	1 6-1 6	Sapouites, per lb.	1 3
— Alicante, lb.	0 6-1 3	Walnuts, per bag...	11 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing prices for various plants in pots, including Adiantums, Arbor-vitae, Ferns, and others.

do. Tomatoes, 6d. doz.; Cucumbers, 6d. to 8d. each; Mushrooms, 1s. 2d. per lb. Birkbeck's; Potatoes, 1s. to 1s. 2d. per cwt. Cucumbers, 3d. to 6d. each. Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do. foreign, 1d. to 2s. do.; Mushrooms, 1s. to 1s. 6d. per lb.; Fibrets, 1s. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qf.), for the week ending Dec. 7, and for the corresponding period of last year, to ether with the difference in the quotations. These figures are based on the Official Weekly Return—

Table showing average prices of British Corn for Wheat, Barley, and Oats in 1900 and 1901, with a difference column.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period December 1 to December 7, 1901. Height above sea-level 24 feet.

Large meteorological table with columns for Direction of Wind, Temperature of the Air, and Temperature of the Soil at various depths.

Remarks. Another week characterized by cold, dull, dry weather.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending Dec. 7, is furnished from the Meteorological Office—

The weather during this period was very rainy in the northern and western parts of Ireland and Scotland, and small amounts of rain were not infrequent in the western districts of England. In the south and east, however, the weather was generally dry, the small quantities of rain experienced mostly falling as the weak drew towards its close.

The temperature was above the mean in all districts; in England, E. and S., and in the Channel Islands, the excess was more than 10°, but in many other parts of the Kingdom it was 4°, and in Scotland W., England, N.W., and Ireland N., it was as much as 5°. The highest of the maxima occurred on Saturday in most districts, but on Friday at many north-western and northern Stations. In Ireland, N., the thermometer rose to 57°, and in all the English districts to 56°. In Scotland, Ireland, S., and the Channel Islands, it did not rise above 47° or 52°. During the middle of the week the daily maxima were much lower than these values, and by many inland and eastern stations they did not exceed 5°. The lowest of the minima were registered on the 4th or 5th, and ranged from 21° in the Midland Counties and 25° in Scotland, E., and England, S.W., to 33° in Ireland, N., and 35° in the Channel Islands. The rainfall greatly exceeded the mean in Scotland, N. and W., and slightly in E., 2.49 in. N.W. and Ireland, N., while in Ireland, S., and England, S.W., it just equalled the mean value. In all other districts it was a deficit.

The light sun-shine was rather in excess of the mean in Scotland, E., and equal to it in England, E., where the records showed a deficiency. The percentage of the possible amount of duration ranged from 21 in 6 in England, S. and E., and 20 in the Channel Islands, to 5 in Ireland, N., and 4 in Scotland, N.

THE WEATHER IN WEST HERTS.

Another week of variable temperature. Cold at the beginning, warm in the middle, and cold again at its close. On two days the highest shade temperature exceeded 51°, and by way of contrast, on two nights the exposed thermometer showed respectively 33° and 11° of frost. The soil is at the present time at about a seasonable temperature, both at 1 and 2 feet deep. Rain fell on four days, but to the total depth of only half an inch, and yet these were the wettest four days experienced here for nearly a month. This moderate quantity was, however, sufficient to start the percolation of rain-water through the percolation gauge on which short grass is growing. Previous to this not a drop of water had come through that gauge since the middle of May, or for seven months. On four days during the week no sun-shine at all was recorded, and on another day the record only amounted to six minutes. The wind was mostly westerly, and at times strong, and on the 9th rose to the force of a moderate gale. The atmosphere was on the whole dry for December. E. M., Birkbeck's, Dec. 10, 1901.

DIMORPHISM OF THE FRUIT OF PEARS.—

A review of a brochure on this subject, published by M. EDOUARD DE JANCZEWSKI, is contributed by M. ERN. MALINVAUD to a recent number of the Bulletin de la Société Botanique de France, and deals with the subject as follows: "M. JANCZEWSKI'S notes are interesting alike to botanists and to horticulturists. The difficulties often found in determining the name of any particular variety of an Apple, and still more of a Pear, may result from inconsistency in the characteristics of the fruit, which latter are liable to vary considerably according to climate and cultural conditions. Thus in a milder climate a Pear and its peduncle are shorter, and the russet spots broader and more numerous than is the case in the same variety grown in colder, damper climates, where the fruits are, on the other hand, more deeply red on the sunny side. Vegetable physiology explains these variations. Other diversities are due to the method of cultivation; for instance, certain Pears when grown on espaliers are not of the same form as when grown on pyramidal trees. That which has attracted less attention is the fact that fruits on the same tree, in spite of the identical external conditions under which they have developed, are never precisely alike. It must be remembered that the corymb of a Pear usually includes from seven to ten flowers all alike, the floral peduncles are inserted on a thicker axis, which later swells out considerably. All the flowers are lateral to this axis except one, which remains terminal. All the flowers can be fecundated, but the nutritive matters supplied by the shoot suffice to nourish a certain volume of fruit only, and the small Pears are the only ones which are perfected in well-laden sprays; larger fruits occur in great numbers, but generally fall early, and the fruit-spur usually bears but one fruit, that which was first developed and monopolised all the nourishment. Now, of all the flowers, that which first opens on the cluster, and is the lowermost one, has the most chance of becoming a fruit; and the terminal flower, which in this case has least advantage, produces a lateral, and almost always a smaller fruit. Hence, dimorphism, more or less noticeable according to the variety, between the lateral and the terminal fruits. Consequently, the ripening of a terminal fruit is necessarily later than that of the lateral fruits, which can be picked much earlier.

FRUITS AND VEGETABLES.

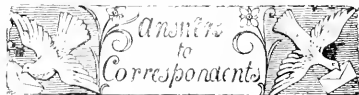
GLASGOW, December 11.—The following are the averages of the prices recorded since our last report: Apples, 2s. to 3s. per barrel; Grapes, home, 1s. 6d. to 1s. 3d. per lb.; Bananas, 7s. to 10s. per bunch; Lemons, 1s. 6d. to 1s. per case; Oranges, Java, 7s. to 8s. do.; Valencia, 8s. to 9s. do.; do., ordinary, 5s. to 11s. do.; do., large 7½s. to 10s. do.; Tomatoes, 6d. to 8d. per lb.; Onions, Valencia, 7s. 6d. to 8s. 6d. per case. Mushrooms, 1s. 6d. per lb.

LIVERPOOL, December 11.—Wholesale Vegetable Market.—Potatoes, per cwt.: Up-to-late, 2s. 2d. to 2s. 6d.; Main Crop, 2s. 6d. to 3s.; Lynn Grays, 2s. to 2s. 6d.; Bruce, 2s. 2d. to 2s. 6d.; Turnips, 6d. to 1s. per 12 bunches, and 1s. 2d. to 1s. 4d. per cwt.; Carrots, 6d. to 8d. per dozen, and 3s. 6d. to 3s. 9d. per cwt.; Onions, English, 7s. to 8s. per cwt.; do., foreign, 3s. 3d. to 5s. 6d. do.; Parsley, 6d. to 8d. per 2s. do.; Valencia, 8s. to 9s. do.; do., ordinary, 5s. to 11s. do.; do., large 7½s. to 10s. do.; Tomatoes, 6d. to 8d. per lb.; Onions, Valencia, 7s. 6d. to 8s. 6d. per case. Mushrooms, 1s. 6d. per lb.

ENQUIRIES.

WHAT wood is used in the construction of sleepers—1, in the Indian railways; 2, in the Canadian Pacific; 3, in the American Pacific; 4, in the Libyan Railway (Atbara Railway); 5, in the West Australian and South Australian Railways? *Prof. C. Reines.*

MARKET-GARDENS OF PARIS.—Where can I obtain a full report on the Lecture on the Market-gardens of Paris delivered lately by M. Grandeaun? *Everly.*



AMARYLLIS FLOWERS: *Reber.* The form is more or less that of a funnel, slightly reflexed at the margin. The colours vary from crimson to light rose, with white ground, and sometimes a patch of green in the bottom of the tube. Leaves strap-like, 1 to 2 inches wide, 1 to 2 feet long, and channelled.

AZALEA MOLLAIS: *Experientia doct.* More likely to succeed in smoky northern towns if afforded light airy loam or peat, supplementing these, if very poor, with well decayed stable-dung or leaf-mould, seeing that for six months they are leafless. The same rule as regards cleanliness holds good for Azaleas as for Rhododendrons.

BEGONIA GLOIRE DE LOBBRAINE: *A. Y.* This Begonia is giving rise to a number of sports, differing from each other in shade of colour, and to a less degree in habit of growth also. The lighter pink variety you send is most like that of Mrs. Leopold de Rothschild, which was first observed in the Gunnersbury House collection. It has larger flowers than those of the type, is paler in colour, and is, according to Mr. Hudson, more persistent. The Furnford Hall variety has much less colour than either of those you send, and Caledonia is nearly white.

BLACK APHIS ON CHRYSANTHEMUM PLANTS: *J. G.* What you suggest is the right course. If there are no flowers on them, syringe with or dip the plants in a vessel containing 1 pint of tobacco-water to 5 gallons of water. Do not syringe with clean water afterwards.

BOOKS: *A. G.* *The Orchid-grower's Manual*, by B. S. Williams; *Choice Stone and Greenhouse Plants*, by the same author; the first illustrated with woodcuts, the second not illustrated; both are to be obtained of Mr. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*H. C. S.* *The Kitchen and Market Garden*, published by Macmillan & Co., St. Martin's Street, Leicester Square, London, W.C. This work was published in 1877. A slightly more modern handbook is *Farming for Pleasure and Profit*. Eighth Section: *Market Garden Husbandry for Farmers and General Cultivators*, by Wm. H. Abbott (Chapman & Hall), 11, Henrietta Street, Covent Garden, W.C.).

W. G. *Vegetables for Exhibition and Home Consumption*. Write to the author, Mr. W. Bennett, The Gardens, Aldenham Park, Elstree, for the particulars required.

CALLAS: *B. W. T.* Send roots (tabers) for our inspection, otherwise we cannot advise you as to treatment.

CARINATION MAGGOT: *A. P.* The larva of a fly, *Hylenia nigrescens*. Hand-picking is the only remedy. The plants should be gone over daily. See the *Caruntion Manual* (Cassell & Co.), p. 185.

CALLIFLOWER OR BROCCOLI: *A. M.* Impossible to say from appearances only, as there are now so many crosses between the two. If you do not know, we do not know who should. Of the two, it is more like Cauliflower; but we do not know whether it is hardy or not.

GRAPE DISEASED: *J. B.* The decaying spots on Grapes sent are evidently the work of a fungus (Ascosporium). On the white varieties the spots have a distinct brown margin, an inner slightly discoloured area, and older spots show a reddish centre. Since the disease appears every year as stated, treatment should begin early, because the attack probably begins on the foliage. Ripping Vines may be washed over with a solution of sulphate of iron. When in foliage, Bordeaux Mixture, used several times in a season, is said to give good results. Rich stable-manure is reputed to render the Vines liable. The disease will spread in stored bunches, hence care should be taken to select those with sound Grapes only. See *Gardeners' Chronicle*, February 2, 1893, for further particulars of this malady. *W. G. S., Leeds.*

HEAVY BUNCH OF BLACK HAMBURG GRAPES: *F. S.* Mr. Hunter showed at Belfast, on August 20, 1871, a bunch weighing 21 lb. 12 oz.

HELIOTROPES LOSING THEIR LEAVES: *C. C. C. C.* The temperature you are affording them is too high by night, and by day by 10°. You cannot apply so much heat as this in the depth of winter without bad effects following. The cure is; less heat, and more air when it can safely be afforded, and just enough water at the root as will cause a slight growth in the plants.

INCURVED VARIETIES OF CHRYSANTHEMUMS: *Ashford.* The following varieties are of the very best exhibition type:—*C. H. Curtis*, Queen of England, Lady Isabel, Nellie Southern, Frank Hammond, Mrs. H. J. Jones, Mr. E. Bennett, Triomphe d'Éve, Mrs. W. Howe, Pearl Palace, Empress of India, John Lambert, Thos. Lockie, Creole, Egyptian, King of the Yellows, Madame Durandal, Hanwell Glory, Ma Perfection, Globe d'Or, Topaze Orientale, Jalene, Duchess of Fife, Chrysanthemum Bruant, Robt. Pettiford, Yvonne Desblanc, and Louisa Giles.

LAWN SWEETING-MACHINE: *W. S.* See p. 77, vol. xxvi., 1899, for figure; makers, Messrs. Vaughan Brothers, Birmingham. We know of no gardener using such machine. For the electrically-moved lawn-mower, advertise in our or engineering journals.

NAMES OF FRUITS: *W. V.* The Pear is too much over-ripe. *D. T.* 1, Lady Heniker; 2, Rabine; 3, Nelson Collin; 4, Waltham Abbey Seedling; 5, Northern Greening.—*H. E.* 1, was quite rotten when received; 2, Millot de Nancy; 3, Beurré Dumont.

NAMES OF PLANTS: *J. W. E.* 1, *Clivia nobilis*; 2, *Selaginella Kraussiana*, which is the proper name of the plant known in gardens as *S. denticulata* and *Lycopodium denticulatum*.—*L. O. S.* 1, *Dracena ferrea*; 2, *Sempervivum tortuosum variegatum*; 3, *Acahypha*, probably; leaf dried up; 4, *Carex variegata*; 5 and 6, utterly unrecognisable—why put us to so much trouble and loss of time over such miserable specimens?—*E. T.* 1, *Lælia Arnoldiana*; a light form of *L. autumnalis* was once sent out as *L. Arnoldiana*, and at present there are some of the same plant from a more recent importation in flower in gardens. They appear to be identical with *Lælia Marriottiana*, which was advanced as a natural hybrid of *L. purpurea*, we believe.—*H. W.*, *Reduth*, *Myoporum ptyliforme*.—*Desirous*, 1, *Juniperus virginiana* var. *elegans*; 2, *Juniperus virginiana tripartita*.—*Bob*, 1, *Ruscus aculeatus*, Butcher's Broom; 2, *R. racemosus*.—*W. T.* *Acanthus* species, see next week's issue.

NURSERY WORK IN SOUTH AFRICA: *G. W. Davidson.* If you will furnish us with your name and address, we will put you into communication with a head gardener who spent two years there, and is willing to impart his experiences.

ONIONS DISEASED: *J. C. W.* The bulbs sent are attacked by a fungus whose spores cause the grey mould, while the black seed-like

bodies embedded in the scales are resting masses of the same fungus. It is probably the same which destroys Hyacinth and Tulip bulbs. The disease must have started in the growing plants, and these should be treated with potassium sulphide (½ oz. in each gallon of water), or Bordeaux Mixture. Bulbs like those sent should be destroyed; they are a source of infection. In plots where the disease has been present, Onions should not be grown again for three or four years, and during this time a dressing of quicklime will help to clean the soil. See *Gardeners' Chronicle*, vol. xvi., 1891, p. 160. *W. G. S., Leeds.*

ORCHIDS: *Oncid.* 1, The proper name of the plant known in gardens as *Oncidium Saint-legerianum* is *Oncidium spilopterum*; it grows best in an intermediate-house, and kept dry when not growing. 2, *Lælia palida*; we do not know the species. 3, *Lælia majalis* grows and flowers best when suspended in a cool, airy greenhouse or viney, where it gets plenty of sunlight; keep it dry until growth commences, then apply water freely; the temperature for it at present is correct, if the plant is kept dry. 4, *Sphagnum-moss*. To keep this in a fresh state, it is best to store it in a shady situation under a wall or hedge outdoors; but it should be examined before using, to remove slugs or snails.

ORCHIDS IN LEAF-MOULD: *J. W.* and *Crispinum*. Please send name and full address, not necessarily for publication, but as a pledge of your bona fides.

PINKS DISEASED: *P. W. R.* *Rhopalosiphum* (aphis) dianthi, Schrank, is the name of the aphid on the roots of the Pink. The sickly condition of the plants is partly due to their attacks; but the plants appear also to be physically weak, and the method of cultivation may be at fault. Carbon bisulphide applied with a suitable syringe to the soil surrounding the roots would kill the aphides, but your better course would be to make a fresh border, and start with a clean stock.

POTASH AND CAUSTIC SODA WASH FOR FRUIT TREES: *R. J. P.* The effect of lime when mixed in rather larger quantities than is usual with the copper sulphate, in the making of the Bordeaux Mixture, is to lessen the corrosive action of the sulphate on the foliage of plants. If you fear the effects of caustic soda and potash on your trees at this season, when used at the recognised strength, it is an easy matter to dilute the mixture somewhat with water. One formula gives 1½ lb. potash and 1½ lb. of soda, to 3 gallons of water.

RHODODENDRON CAUCASICUM AND R. CUNNINGHAM'S BLOSS IN NORTHERN SMOKY TOWNS: *Experientia doct.* The first-named species with flowers white in the interior of the throat, and spotted green, and the entire flower reddish on the exterior, and the growth of the plant dwarf, is not, so far as we are aware, hardier or more capable of resisting the impurities of smoky towns and districts than *R. ponticum*, or the hybrids from this. *R. caucasicum* will resist a greater degree of cold than *R. ponticum* in so far as regards the flower-buds; but in no part of those islands is the frost so great as to kill the plants. The main thing in smoky towns is to frequently cleanse the foliage with water applied with the garden-engine or a hose. The *Rhododendron Cunninghami* of gardens = *R. ponticum* ♀ × *R. arboreum* ♂, is not bluish as suggested, but white. It is quite hardy. There are many hybrids more beautiful than these which might be grown in smoky places.

VIOLETS: *B. L.* Not clearly expressed, but he meant strong runners having some roots.

COMMUNICATIONS RECEIVED.—*A. C. Verriens*.—*Dr. D.*, *Burlin*.—*C. M.*, *Redge*.—*J. R. J.*, *Lywinstone*.—*S. G.*, *Redruth*.—*C. D.*, *E. K.*, *Hanham*.—*N. E. B.*, *J. E. H.*, *J. B. T. R.*, *Castlewellan* (many thanks)—*A. R. P.*, *Nice*.—*W. E. G.*, *J. D. S.*, *Baltimore*, U.S.A.—*J. McK.*—*W. S.*, *J. C. B.*, *G. O. R.*, *Royston*.—*W. H. B.*, *McCulloch*.—*H. Elliott*.—*J. Feise*.—*B. W. W.*, *D. A. M.*.—*E. J. G.*, *L. W. C.*, *Worsdell*.—*H. L. H.*, *E. C.*, *R. D.*.—*H. W.*, *C. D.*.—*D. R. W.*.—*J. R. J.*



THE LIME AVENUE AT HAREFIELD, THE SEAT OF THE MARQUIS OF SALISBURY.

THE PHOTOGRAPH BY J. B. BURNETT, F.R.S.



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VEGETARIAN MILLINERY.

A RECENT article in one of the London daily papers on "Vegetarian Millinery," referred to a contemplated bazaar that was arranged to be held by the "London Vegetarian Society," the great aim of which was to lead a crusade in favour of vegetarian hats, bonnets and toques, and to convince sceptics of the possibility of having becoming millinery without sacrificing animal life to attain it. The writer of the article in question goes on to say: "But just as the cravings of the unrefined appetite are met by such dishes as 'haricot chops' and 'lentil steaks,' so it would seem upon enquiry that leguminous sables and ermines will be available for the fur toques of the fair and fashionable devotee of the cult, which, with the present prohibitive price of the natural article should bring even the unb' liever to the stalls." Further than this, it is suggested that new ground may be broken, and even that the Cauliflower and Parsnip may receive new and attractive illustrations of decorative uses.

We must confess to a want of intimate knowledge of what developments in the applications of vegetable substances are in the minds of the members of the excellent society referred to, or of the writer of the paragraph quoted; but on the subject of the capabilities of the vegetable kingdom in supplying materials for articles of dress, whether useful or ornamental, we are at one, both with the society and with the writer himself; and a few thoughts of what has been done and what may yet be done in this direction, may be of some interest to those of our readers, most, if not all of whom condemn the wanton destruction of animal, and indeed of plant life, as fully as those who may have enrolled themselves in any society for the distinct purpose of encouraging such protection.

HATS AND BONNETS.

Though the text that has inspired this paper is "Vegetarian Millinery," we may perhaps be excused for briefly referring in the first instance to a few substances of comparatively recent introduction which have not yet established positions as regular articles of trade. The fact is, that the vagaries of fashion are so great that there is no continuous demand for any one particular substance unless it has the capabilities of being so changed as scarcely to be recognised under its altered conditions. The chief exceptions to this rule with regard to materials for hat-making, are the universally used straw, which with the great increase of gentlemen's straw hats, has of late years been very much in demand, as also, chiefly for ladies hats, the light split wood of the Willow, generally known as Chip. In addition to these may be mentioned Cuba Bast, the inner bark of the West Indian Hibiscus, elatus, and Sisal Hemp, the fibre from the leaves of Agave rigida var. sisalana. These two last are excellent materials for hat-making, and are capable of being altered in character, appearance, and colour, to suit all fancies and tastes.

It may interest the members of the London Vegetarian Association to know that these materials are always available, and that if they wish for greater variety there is Raffia, so well known as a garden tying material, which makes excellent hats, and when split into very fine threads, is made, in Madagascar, into a fabric for clothing purposes. This material, as our readers will know, is the cuticle of the leaf of a Palm, *Raphia pedunculata*, better known perhaps as *R. raffia*, though a similar substance has more recently been obtained from the west coast of Africa from *R. vinifera*, besides which other palms as *Mauritia flexuosa* and *Astrocaryum vulgare* yield a very strong and almost identical material used for making hammocks. All these and more are always ready for conversion into "Vegetarian Millinery," and in the matter of trimming we have an equal number and variety, such, for instance, as the cuticle of the Sugar-cane, which, when dry, assumes either a light silvery-yellow or a deep, glossy, golden tint, and is much used for decorative purposes in the Pacific Islands, as is also that of *Tacca pinnatifida*.

Not many years ago the inner bark of the Baobab tree (*Adansonia digitata*) was bleached and dyed and converted into what seemed to be an excellent hat material

either for the hat itself or for decorative purposes, and even the woolly leaves of *Columia coriacea* were so prepared as to make them an attractive article of trade.

But if all these things have value in them from a commercial point of view, why should there not be a continuous demand for them, or for some of the older and better known materials? as, for instance, the well known lace bark (*Lagetta linearia*), of which it is said that Charles II. received from the Governor of Jamaica a cravat, frill, and a pair of ruffles, made of this bark. Useful and ornamental articles are frequently made from it at the present day, as the exhibits from the West Indian Colonies at any of the international exhibitions so frequently prove.

SEEDS.

That there is no lack of materials suitable for purely decorative purposes, to be found in the vegetable kingdom, is abundantly proved by the existence of the numerous ornamental seeds, many of which are valued for their attractive colours, while the forms of others have much to recommend them. Under the first head may be included the bright scarlets of the *Erythras*, and of *Adonanthera pavonina*, the black and reds of the *Ormosias*, and *Abrus precatorius*, the slate colour of the so-called Nieker-nuts (*Cosalpinia bonducella*), all of which have from time to time been used for personal adornments, in the form of necklaces, bracelets, earrings, &c. A short time since the seeds of *Adenanthera* found their way into the hands of a West-end London jeweller, apparently for the purpose of being mounted in gold—the bright, glistening red in a setting of the precious metal would equal any coral in appearance, though perhaps not in value. In connection with the application of seeds and fruits for jewellery purposes, we may further mention the rough, corrugated brown fruits of the Indian *Eleocharis ganitrus* (fig. 131.), and the paler but somewhat similar fruits of the Australian species of *Fusanus*. These are frequently strung, and used in the making of necklaces and earrings; as are also the intense black, smooth, and globular seeds of *Sapindus saponaria*, which, it is said, were formerly brought into England tipped or edged with gold or silver, and used as waistcoat buttons. These, as well as the fruits of *Eleocharis* and *Fusanus*, are not unfamiliar amongst us at the present time, mounted and used as ornamental hair-pins.

Another form of ornamentation much used by the Indian tribes is the hard, bony grain known as Job's Tears (*Cox lachryma*), numerous varieties of which, varying in form and colour, are used for ornamenting articles of clothing (fig. 133.); the most remarkable, however, is the long, cylindrical, or tubular forms, distinguished by the varietal name of *stenocarpa* (fig. 133.). These forms vary considerably in size, and when threaded and formed into ornamental surface designs, or used as a fringe, are very striking. Referring to these seeds, Dr. Watt, writing after the Colonial Exhibition of 1886, says: "The Karens cover their dresses with the narrow cylindrical form in embroider-like designs, and the Angami Nagas construct elegant earrings, in which a rosette of these seeds surrounds a greenish beetle-wing. The various grains popularly known as Job's Tears, seem to stand a good chance of

coming into use in Europe in the construction of artificial flowers, laces, bangle trimmings, and other such purposes for which glass beads are now used, and possibly also in Catholic countries for the manufacture of rosary beads. If found capable of being dyed a deep black, there might be an extensive demand for them, since they would be much more durable than glass. During the Colonial and Indian Exhibition, several merchants, especially from France, enquired after seeds suitable for the above purposes. The writer was not able at the time to furnish these gentlemen with samples of the cylindrical seed, but he gave them samples of the ordinary Pear-shaped form. They seemed to think there might be some prospect of even that form coming into use. On being shown the Karen ornamented dresses, they professed a firm conviction that the cylindrical grain would find a ready sale. . . . Subsequently numerous samples of Job's Tears from every district in Burma were obtained, and it has transpired that of the spherical form there are several small hard grains which seem quite as likely to find a market in Europe, as the cylindrical at the exhibition; only the coarser, loose-shelled, edible form was shown, but there would seem every prospect that the wild forms specially collected by the hill tribes of Burma for decorative purposes, are those which should be offered as most suitable for the European market. Along with these the cylindrical form would afford the manufacturer of laces, &c., a choice of two forms which might be elegantly combined."

The prospect of a future trade in Europe with these ornamental Indian grains has, so far as we are aware, never been realised; and like many other products, including those seeds we have already referred to, remain undeveloped sources of profit.

ARTIFICIAL FRUIT, &c.

On the subject of artificial flowers and fruits, everyone knows what a great improvement has been made in these articles of female adornment in the past few years. Whether in the matter of flowers or foliage, Nature is now so admirably copied that it is often very difficult to distinguish between them; but yet there are fields for fresh developments, and entirely "new departures." Thus, the so-called "Fairy Roses" of a few years ago, composed of the pappus of the seeds of an unknown Asclepiadæacous plant dexterously wired together, and dyed in the most delicate tints of colour, were capable of a much further development; indeed, it is surprising that they did not "take on," as the saying is. Surely some clever member of the Vegetarian Association could easily manipulate artificial feathers from the great variety of pappus to be found not only in the Asclepiadææ, but also in some other Natural Orders. While speaking of these pappus-crested seeds, we may also refer to them as sources of materials in the production of felted fabrics, or even for vegetable furs, the "sables and ermines" before referred to. In *Calotropis gigantea* the small seeds with their silky crests are tightly packed in the large capsular fruit (fig. 134, d). These silky hairs (fig. 134, e) are usually known as munda floss, silk cotton, or vegetable silk, and are used in India for stuffing cushions or pillows, as

well as for making into a coarse yet soft fabric. On account of its soft and satiny character, it was at one time recommended as a material for weaving into under-garments; but on account of its short staple, it was found not only to be difficult to spin, but also to lack durability. Many times since then, this and other similar vegetable flosses have had some attention given to them. The latest report upon this particular species was that, in combination with wool or cotton in the preparation of the yarn, a large and important industry was likely to be established.

Bombax malabaricum, though belonging to an entirely different natural order, namely one of the divisions of the Malvaceæ, bears a dehiscent capsular fruit (fig. 134, A), filled with a silky floss, which surround the seeds in the same way as the common cotton. It is extremely soft and silky to the touch, and like the floss from the *Calotropis*, has little or no strength, and though it is sometimes woven by hand in India, and also used

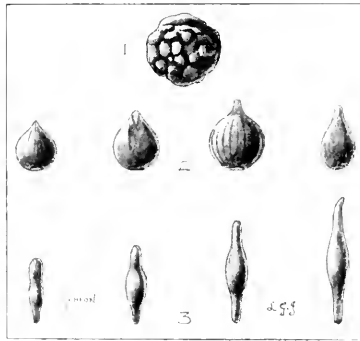


FIG. 133. "VEGETARIAN MILLINERY."
1. Seed of *Eleocharis gangetica*.
2. Four varieties of Job's Tears (*Coxia lachrymifera* Job).
3. Four varieties of *Coxia lachrymifera* Job var. *steno-carpa*. All of natural size. (See p. 445.)

for stuffing pillows, it is considered of inferior quality to other silk cottons; a term which is not only applied to the floss of this species, but also to that of the allied tree, *Eriodendron anfractuosum*, and also to *Cochlospermum gossypium*, belonging to the natural order Bixineæ (fig. 134, b, c).

The subject discussed in this article might be expended to much greater length, but sufficient has, we think, been said to show how wide are its ramifications and what an important field of operations are open not only to the members of the Vegetarian Society but to others, before the world is exhausted of new vegetable products. *John R. Jackson, Claremont, Lynnhurst, Dorset.*

ORCHID NOTES AND GLEANINGS.

CALANTHE VEITCHI AND C. VESTITA.

NOTWITHSTANDING the many hybrid *Calanthes* that have been raised, the carmine-rose coloured *Calanthe Veitchi* still forms the bulk of the varieties found in bloom in the winter, probably in consequence of its being increased greatly by reason of its value as a winter bloomer for the temperate-house. In Mrs. Brightwell's gardens at "The Grove,"

Stammore, one side of a house is completely filled with plants of *Calanthes*, their graceful spikes of bright coloured flowers making a great display. The gardener, Mr. J. W. Odell, has arranged a number of specimens of *Calanthe vestita rubro-oculata* and *C. v. luteo-oculata* together with light foliage plants, and by keeping the house tolerably dry the display has been maintained for some considerable time.

ZYGOPETALUM MACKAILI.

A photograph of plants in fine condition of this favourite inmate of our warm houses is kindly sent by Mr. John Butler, Normanton Gardens, Stamford, and which well represents the beauties of the flower. It was first introduced in 1826 from Brazil, and is regarded as one of the finest autumn and winter-flowering Orchids, adapting itself readily to various methods of culture, and sometimes appearing in great beauty in warm greenhouses, conservatories, or fruit-houses, though more frequently in the ordinary plant stove-house. The specimens photographed are large ones, each bearing many flower-spikes. The white lip is veined with blue, and the sepals and petals are greenish, barred with purple-brown.

Some authorities place *Zygopetalum crinitum* as a variety of *Z. Mackaili*, but the upright leaves and more erect flower-spikes of *Z. crinitum*, render it easy to distinguish. In the odour of the flowers there is a marked difference, *Z. Mackaili* having the sweet odour of some Hyacinths, while *Z. crinitum* has the scent of Aniseed. Both species have strong fleshy roots, which take readily to a compost which consists of loam-fibre one-half, and the remainder of peat and sphagnum-moss. During active growth, some gardeners afford the plants occasionally weak liquid-manure made with cow-dung, and others mix a small quantity of sun-dried cow-manure with the potting compost; and the same is done for *Peristerias*, *Phaius*, *Calanthes*, and other strong-growing terrestrial Orchids.

CIRRHOPETALUM APPENDICULATUM.

A good specimen of this remarkable and pretty *Cirrhopetalum* is in flower in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood). It is very distinct from other species in cultivation, each scape bearing but one large flower, the concave upper sepal and narrower petals of which are whitish, with purple lines, and bearing at the tips purple feather-like appendages. The large and thick tongue-like labellum is mauve-purple, and the lower sepals, which join and gradually taper into long, slender points, are 6 inches in length, white, spotted and striped with purple. The species, which is rare, is a native of Sikkim, and probably other Indian highlands. It was first flowered by Sir Trevor Lawrence, Bart., whose plant was illustrated in the *Gardeners' Chronicle*, Dec. 10, 1898, p. 115. It is figured in King and Pantlin's *Orchids of the Sikkim Himalaya* as *C. ornaticissima*, a well-known species, bearing an umbel of several flowers.

FOREIGN CORRESPONDENCE.

CANNA MRS. KATE GRAY.

YOUR Californian correspondent is mistaken when he says (p. 366), that "Canna Mrs. Kate Gray was obtained by fertilising Italia with the pollen of Madame Crozy." Italia, and all the other Orchid-flowering *Canna*s, are infertile, because they are true hybrids amongst different sections of *Canna*s. The raiser of this class of *Cannas*—more beautiful in the south than the French *Cannas*—is the well-

noted horticulturist, M. Ch. Sprenger, Naples, who has written the most interesting story of his creations in the *Revue Horticole*, 1901, p. 116. Mrs. Kate Gray is Madame Crozy Italia as pollen-parent. W. Müller, Naples.

WINTER CONSOLATIONS.

"SWEET," says Shakespeare, "are the uses of adversity;" for if there is much to depress, there is also much to console the patient and long-suffering cultivator at this season of the year. Some of his trees, for example, may be destroyed (as several of my own have

the part of their youthful successors can replace; but even in such circumstances, some considerable mental compensation is discoverable in watching with the eyes of Faith and Patience the gradual evolution of these. There is a deep and enduring pleasure in such experience which only the lover of Nature can know.

During the season of winter the planting of bulbs is also a very fascinating occupation. As a general rule, I make a point of materially adding to my already extensive collection of Snowdrops every year. It is almost impossible, especially in a region such as this, to have too

our happiness, and whose very memory is consoling and refreshing when their bright presence has departed, have been generated by the marriage of two harmonising leaves. Such a conception could only have occurred to a born naturalist—a deeply brooding, instinctively botanical mind. It is only such teachers as Goethe and Linnaeus who can reveal to us the divine significance of flowers.

Though it is chiefly in spring and summer that we behold their revelations, it is during the winter season that we think of them most lovingly, as "dreams too bright to last." Fair as they have been to the outward eye, they are still fairer to the memory. This is the secret of our careful preparation for their future requirements; and we know from experience that such treasures will not reveal their possible capabilities, if ignorantly entrusted to the keeping of uncongenial soil. If, therefore, at this season we blindly persevere with our garden activities in unconscious defiance of such impressive truths, it will be small consolation ere long to discover that whatever form of vegetative life has been planted in situations out of correspondence with its proper environment, is thereby predestined by its hapless possessor to degeneration and premature decay. David R. Williamson.

IVY AND CHRISTMAS.

THERE seems to exist in some quarters a feeling of repugnance against employing Ivy in Christmas decorations whether in church or home. It is a pity this feeling should continue to exist, for apart from the beauty of the Ivy, and its great value in all kinds of decoration at this season, it is an undeniable fact that along with Holly it formed in mediæval England the vegetation that was used in all kinds of decoration—whether of church, street, or house. Personally, I have made much use of it in decorating both churches and dwellings during a long series of years. Nothing surpassing long Ivy trails for various parts of the church; and for staircases and pictures in the home they can be most effectively employed. In passing I may say that I have also used the common Rush and the Broom for church decoration, both at one period having done duty at the festival of this season, but perhaps in a more lowly position than I have accorded them.

The certainty of Ivy having been invariably used along with Holly is vouched for in the old churchwarden's accounts that have survived the ravages of time. Those of Sir Andrew Hubbard's, Eastcheap, continue for a long series of years to record the purchase of "Holle, and Iye ayenst Christmas," the sum paid varying from 3d. to 6d., 1d. being generally the amount disbursed. The payments do not occur during the short reign of Edward VI., when none of the holidays appear to have been provided for, but with the accession of Mary the churchwardens again provided for Christmas. These payments continued uninterruptedly during the whole of this reign, and also during the first twelve years of Queen Elizabeth, when the last entry appears in the year 1570, and is as follows:—

"Paid for holle yeve, bromes and bowesse.
2 yeres, 11s 11d"

Not improbably the "bromes" would be utilised on the floor of the building, but in any case the entry is interesting as marking an addition not hitherto noted. A reference to the injunction of this reign finds nowhere the use of these evergreens mentioned, but it is certain they were disallowed, though it is just possible a less strict watch would be kept on out-of-the-way parishes, and Christmas de-

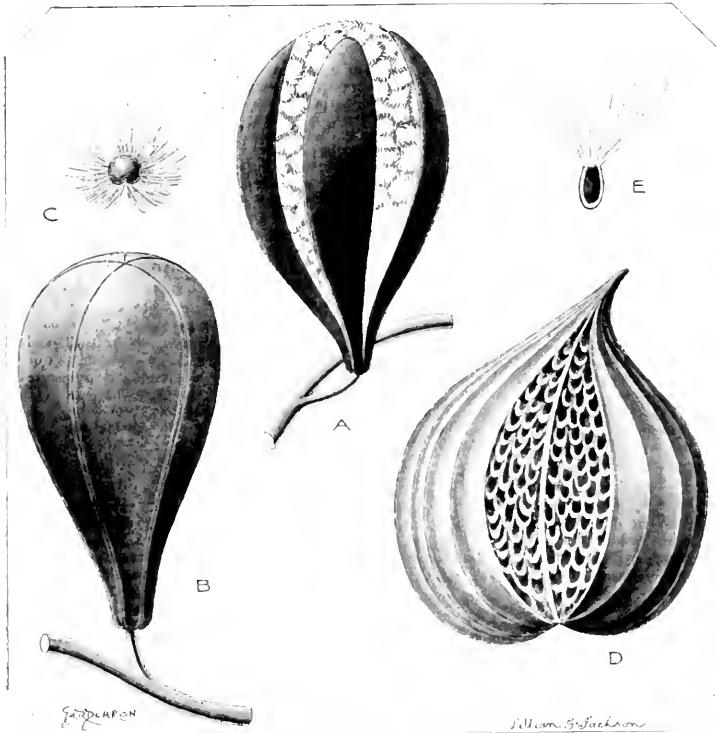


FIG. 131.—"VEGETARIAN MILLINERY": FRUITS OF THE SILK-COTTON TREES.

A, *Bombyx malabaricum*. B, *Cochlospermum gosypium*. C, A seed of same.
D, *Calotropis gigantea*. E, Seed of same. (See p. 445.)

(From drawings by Miss Jackson, "About" natural size.)

been quite recently) by unexpected and outrageous blasts. But if there have been too many of these in his garden, owing to his possession of a too rigidly conservative nature, then he has at least this abiding consolation: that by the removal of those venerable victims, more sunlight and air, both absolutely essential to vigorous plant life, are thereby admitted, as if providentially, into his precious enclosures; and the fruit-trees which remain, hitherto too crowded to admit of great achievements, have space for the adequate conservation of their vitality—the expression of their powers. In many instances, doubtless, trees are uprooted which only the slow and steady growth of years on

many of those lovely flowers, which are our chief consolars when atmospheric conditions are most crucially severe. Though the daughters of Adversity, they are the parents of Hope. Pale and pensive in their outward aspect, they give us bright glimpses of future fruition. Even more radiant is the first vision of the Crocus, and its fair successor, the incomparable Daffodil, pure offspring of the earliest sunlight of the year. It was Goethe, the great German poet and naturalist who created the memorably beautiful expression, "Stars of Earth," when thinking of such exquisite vernal flowers. He it was also who made the interesting discovery that those floral beauties which minister so greatly to

corating might have thus continued uninterrupted till its open resumption in James I.'s reign.

There were several songs in praise of Ivy, sometimes in conjunction with Holly, and those who are able to consult Ashton's *Christmas-tide*, will find not a little to interest them in this aspect of the matter. In one carol—

"Christmas-tide
Comes in like a bride,
With Holly and Ivy-ciad."

And there is a kind of chant on the plant:—

"Ivy is soft and meek of speech,
Against all bale she is bliss,
Well be that may her reach.
Ivy is green with colours bright,
Of all trees best she is,
And that I prove will now be right.
Ivy beareth berries black,
God grant us all his bliss,
For there shall be nothing lack."

The decoration of the houses of farmers, and of the better classes generally, formed part of the duties of the maid-servants; but not to gather either Holly or Ivy, one of the men-servants being required to cut and carry home what was asked for. A very ludicrous punishment was meted out where possible to the lazy lubber who failed to find Cissie or Joan the supply requested. Not only was he debarred from the privileges conferred by the Mistletoe, but if the defrauded maiden could fleh his nether garments while the delinquent slept, she was permitted and expected to nail them to the outer gate of the yard or some other conspicuous place. One can imagine what this meant, apart from the ridicule that followed, to the possessor of the abstracted garment, when we remember that the wardrobe of the working classes in those days was limited to the bare necessities of every-day use. I find a very curious purpose to which the Ivy was put at convivial meetings, such as those of Christmas: "If one hath got a surfeit by drinking of wine, his speediest cure is to drink a draught of the same wine wherein a handful of Ivy-leaves being first bruised have been boiled." So great indeed was the reputed antipathy between wine and Ivy, that an old writer assures his readers if they drink out of a cup formed of the wood of Ivy, the liquor will have no bad effect on them.

It would appear, too, that Ivy was not forgotten by the fair sex when dressing for the gaieties that came with Christmas. Ivy and Holly were worn on the head, and we read also of waist-belts of twisted Ivy being worn. There are many other curious and long-forgotten usages of which Ivy formed a part, but these, which relate solely to Christmas, may be not uninteresting to many who have been unware of the great part it played in the Christmas rejoicings, sacred and social, of olden times. B.

AMERICAN NOTES.

FLOWER CULTURE IN THE U. S.

NEW HAMPSHIRE.—The twelfth census of the United States having been completed, the results are gradually seeing the light in bulletin-form—the figures relating to agriculture and horticulture being now in process of publication. Respecting the floriculture of New Hampshire, we learn that the total area devoted to the cultivation of flowers and plants in 1899 was 28 acres, and the products sold were valued at 108,161 dols. There are eighty-three establishments, and the proprietors of sixty make commercial floriculture their principal business; and the other receipts were 127,267 dols. Florists report

greenhouses with a glass surface of 452,963 square feet, covering 339,722 square feet of land. In addition nearly 100 farmers had an area under glass of 214,258 square feet, used for potting up plants and vegetables—making the total glass-covered area in that State 553,980 square feet. The average glass was 5,662 square feet for florist market-gardeners, and growers having 2,209 square feet each.

RHODE ISLAND.

In the year 1899 some 177 acres of land were devoted to the cultivation of flowers and ornamental plants, and the products sold therefrom were valued at 311,806 dols. The number of establishments engaged in the trade was 139; making the average area 1.3 acre, and the average return 2,264.79 dols. In 188 of these establishments commercial floriculture was the principal business, and the capital invested was 782,115 dols. The receipts from flowers and plants were 288,659 dols., and from other products 7,515 dols. The greenhouses used had a glass-surface of 962,291 square feet, covering 721,653 square feet of ground. In addition, ninety-three market-gardeners and farmers used glass in growing flowers, plants, and vegetables, the area under glass being 675,117 square ft., making with that reported by the florists 1,397,100 square ft. E. C.

DEATH OF AN EDINBURGH SPEEDSMAN IN NEW YORK.

Alexander Waite, who but very recently left England for the United States, died under very distressing circumstances on November 28. The deceased, who was the son of Alexander Waite, formerly gardener at Manderston, Duns, Scotland, was for the last eleven years connected with Peter Lawson & Co., Edinburgh, and had only been a few weeks with Peter Henderson & Co., of New York. A brother of the deceased, at whose residence the death occurred, is W. H. Waite, Graystone Gardens, Yonkers, New York. He was formerly a well known and respected gardener in England.

November 28 in the United States is a great national holiday dedicated annually by Presidential proclamation as a day of "thanksgiving" for the peace, welfare, and material prosperity of the country. It is a day of family re-union; and when business ceased on the evening of the 27th, Alexander proceeded to the home of his brother, whose guest he was to be over the holiday. The weather turned suddenly cold that night, and the room which the visitor occupied was heated by means of a gas-stove connection with the supply-pipe being with some india-rubber tubing. On retiring for the night, Alexander turned off the gas at the stove instead of at the connection with the main pipe, and the gas escaping into the room either through a faulty union or by percolating the rubber tube, he was asphyxiated while he slept. The tragic discovery was made on the morning of Thanksgiving Day by his brother, who went to arouse him. Mr. W. H. Waite is highly respected by the craft here, and the sad occurrence awakens heart-felt sympathy for him.

A CHRYSANTHEMUM REVIEW.

The Chrysanthemum season just closed has been remarkable chiefly for the immensity of the blooms shown; of novelty there has been but very little. We have had two exhibits in New York; the one of which I wrote on p. 352 was hardly a representative effort, as the time was too early in the season; but it did in some way prepare us for the bigness we were to see at the American Institute show in the full season of the Chrysanthemum. Never did the city see such giant blooms, and the

champion exhibitor for size was Mr. A. Herrington, who shows himself to be a great grower of the flower. His largest bloom was Madame Carnot, measuring 25 inches in circumference, and of very solid build, too, even for that solid variety. A tape taken over the bloom as it stood in the vase gave 23 inches. Of course, if it had been shown on a board, these figures would have been higher. It is interesting to note how few blooms of any pink or red colours are staged—so few, indeed, that the display of blooms as a whole, gave the impression of a yellow glow; Major Bonafon, Golden Wedding, the yellow sport of Madame Carnot, and Colonel Appleton dominated. Then in whites nearly all exhibitors contributed Timothy Eaton, a great coarse bloom of the Japanese type, not of the purest colour, but large—immense, therefore much desired by the many. It is an easy grower too, by all accounts. This variety is a Canadian, shown here last year for the first time, but now everywhere. The European Chrysanthemum grower visiting one of our shows would miss the true incurved type. As I recall things, Major Bonafon was the only one seen at the New York show. As a matter of fact, the old true incurved or Chinese is a lost thing, and when the schedule of a show calls for six incurved, it is a sure thing that Japanese incurved will be shown; and indeed that is the understood interpretation. On reading through the reports of the English shows, I can follow the variety lists of the Japanese classes very well; but when it comes to the incurved, unless the varieties are those that were in collections seven years ago, I am lost.

It is interesting to see that the march of the Chrysanthemum in England and over here is much alike on the whole; but I fancy we run to extremes more rapidly and more decidedly. Perhaps some of those new dark colours to which your pages bear evidence will emigrate to us, and help to relieve the present yellow-white monotony. We need men like Wells, Godfrey, &c.

THE PLANT-BREEDING CONFERENCE.

Arrangements for the International Conference are now progressing. Up to this time the work has been tentative, but the support from all quarters justifies the decision to call the Conference, and at the latest meeting of the Horticultural Society of New York, a special committee was given the matter in hand to carry out. The promised co-operation of the English horticulturists, and their possible presence, is giving a decided stimulus, and they can rest assured of a more than cordial welcome. Leonard Barron.

BELVIDERE HOUSE, MULLINGAR.

This is beautifully situated on the east side of Lake Belvidere—which is also known as Lake Ennel, about 4 miles south of the ancient town of Mullingar, and is the seat of C. Brinsley Marlay, Esq. The estate at one time formed part of the domain of the Earl of Rochfort and Belvidere, from whom it has descended to the present owner; the house is substantially built of limestone, and although not a large one it is very comfortably arranged, and contains many interesting things. The course of events in Ireland during recent years has unfortunately not been in favour of building new houses, or enlarging old ones. The park is extensive, and contains some fine old trees, especially beech, some of which are believed to have been in existence before the estate was reclaimed from the forest. The soil here rests on the limestone formation, which partly accounts for the beech doing so

well, and for the nice undulating character of the whole place, so different to the peat-bog on the other side of the lake. One soon perceives that the owner is fond of Conifers, splendid specimens of which come into view at every turn, including many very choice varieties, some of which are quite in a small state at present. Three specimens of *Tsuga Mertensiana* (*Abies Albertiana*) in a group have a very fine effect, one of them is 6 feet in circumference at 3 feet above the ground, and is estimated to be 60 feet high; *Cupressus Gordoniana* is about 40 feet high, and very good; *Abies Nordmanniana* is represented by several specimens, one near the drive is very good, and unusually compact in growth; *Picea Morinda*, *Pinus excelsa*, *Pinus insignis*, *Thuopsis dolabrata*, *Cupressus Lambertiana*, *C. Nootkatensis*, are all represented by many fine specimens:

construction of a series of terraces, which are sustained by walls of limestone. Here I noted a good plant of *Pyrus ckeagnifolia*, which was carrying several of its curious fruits; it is a distinct plant resembling *Sea Buckthorn* at a distance, but whiter, and of a somewhat drooping habit. At one end of the terrace a nice looking rockery forms an appropriate termination, and this is well furnished with a suitable selection of plants, and traversed by a winding walk which leads to another plantation of Conifers. From the terrace looking south a large ruin may be seen among some trees, and one is surprised to hear it was built in its present form by an Italian artist at a cost of £10,000; and the idea appears to have been carried out by a former owner, in order to shut out the view of a neighbouring mansion.

dark purple spikes. Most of these were growing on a border facing the west, with the shelter of a wall behind them.

Orchids are grown in two convenient houses, and the plants looked healthy and strong. I noted *Oncidium Lanceanum*, *Saccolabium Blumei*, *Lælia superbiens*, *Dendrobium formosum*, and *Cypripedium lutescens* in flower; some plants of *Dianella* were full of their rich purple berries. *Bignonia venusta* had made a good healthy growth on the roof of one of the cooler houses, where it was trained thinly. Of this climber, Mr. Bayliss says he gets abundance of flowers, the winter temperature it gets ranging from 40° to 50°. This was a very different position from the one it occupied in Florida, where it was growing on the sandy ground like a weed, and full of its bright coloured flowers. Long trailing branches of it were used for church decoration at Christmas, the bright colour of its flowers being set off by an admixture of Spanish Moss, *Tillandsia usneoides*. But I am wandering far from Ireland, and there is one more item to be noticed, viz., a hanging basket in one of the greenhouses filled with *Davallia Tyermani*, in which a confiding wren had built a nest some few weeks previously, and laid several eggs, but some unforeseen occurrence frustrated the course of events, and no family rewarded her labours.

Desfontainia spinosa was growing in the open air and flowering, as was *Eugenia Ugni*; and a golden variegated *Eleagnus* looked very pretty. The *Killamey Fern* thrives here in a most luxuriant manner in a close brick-pit. *W. H. Divers.*



FIG. 135.—GATHERING COCOA-NUTS IN ZANZIBAR.

These and many others are growing in a dell near the lake, known as the Snow Hole; at one time it seems to have been chiefly occupied by bushes and rubbish, until its suitability for Conifers was found out by accident. All the weakly growers, which were not doing well elsewhere, were then removed to this dell, and the result has been most gratifying. They get now abundance of moisture at root and top, a limestone soil, and shelter from excessive wind. Mr. Marlay has wisely used many of the glaucous-leaved varieties in various parts of the plantation. I especially noticed some *Picea nigra glauca*, which were very telling. Some trees of the scarlet-leaved *Maple* were beautifully coloured, much brighter than *Ampelopsis Veitchei*, and were visible from a long distance. I noticed also a fine herd of pedigree Kerry cows, some of which I was informed have taken the highest honours at the R. A. S. E. shows.

From the front of the house a fine view across the lake and the adjacent country is obtained, and the ground slopes sharply to the water's edge, which has favoured the

The kitchen garden contained some fine herbaceous plants, thriving to such perfection that some were scarcely recognisable; the climate evidently suits this class of plants to perfection, and Mr. Bayliss, the gardener, has got together a nice collection in which he takes a great interest. The new *Hemerocallis aurantiaca major* was flowering well, and seemed a great acquisition; *Gentiana asclepiadea* was 3 feet high; *Crinum Powellii* was flowering well, a fine mass; *Cypripedium spectabile*, 2½ feet across and the same in height, had gone out of flower, but it had evidently been a grand sight; a plant of *C. pubescens*, by its side, was doing well; *Adiantum pedatum* was represented by a fine plant, which had survived in its present position through seven winters; *Chelone obliqua* was flowering well; a plant of *Campanula lactiflora* was 10 feet high; *Lobelia syphilitica* was very fine, with its rich purple flowers; *Clematis Davidiana* was doing well; and *Rodgersia podophylla* had got a somewhat shady position, which always suits it best; *Veronica longifolia subsessilis* was full of its

COCOA-NUT BUTTER.

AMONGST the many new vegetable products, good, bad and indifferent, that are frequently being introduced for trading purposes, Cocoa-nut butter has recently attracted some attention. In May last it was referred to in the *Journal of the Society of Arts* as follows: "The manufacture of Cocoa-nut butter is an industry of some importance in the city of Mannheim. The Mannheim factory is said to be the only one of any importance in Germany; it has an output of about 10 tons of butter a day. The product is sold under the name of 'Palmin,' a registered trade name, or Cocoa-nut butter. It is manufactured from the kernels of Cocoa-nuts, and is used as a substitute for butter and lard in cooking. As sold it is generally white in colour, almost tasteless, melts at about 80 Fahr., and is of the consistency of mutton or beef-tallow. When desired by retail customers who are bakers, confectioners, &c., the product is coloured to resemble ordinary butter. When furnished to dealers it is unlawful to colour it. The proprietors of the factory at Mannheim claim that an analysis of their product shows it to contain more than 90 per cent. of vegetable fat, with but a slight trace of water; while ordinary butter contains about 85 per cent. of fat, and nearly 15 per cent. of water. It is stated that the substance does not become rancid easily, that it will keep for three or four months in a cool room, and that it is much more wholesome and easily digested than the ordinary fats used for baking and cooking. For these reasons the product has met with considerable favour in German hospitals and other institutions, and for use in army camps. Cocoa-nut butter is generally put up in square packages, wrapped in parchment-paper, a small proportion being sold in tin cans, which are hermetically sealed for shipment in hot weather. It is sold at one price throughout Germany, namely, about 8d. per

pound, or about half the price of ordinary butter. The kernel of the Cocoa-nut is imported in thoroughly dried strips, forming the Copra of commerce. It is subjected to various refining processes, by which all the free acids and other substances are separated, leaving only the vegetable fat. In the latter stages of the manufacture the product resembles ordinary butter recently churned. It is placed in machines similar to the separators used in creameries, in which the water and other foreign substances are separated by centrifugal force. In the manufacture of Cocoa-nut butter a by-product, consisting of free acids and other substances, is obtained, and sold to soap manufacturers."

Later on, namely, in June of the present year, the British Consul at Marseilles, reporting on the trade of his consular district for 1900, says a new fatty substance for consumption in the United Kingdom, to take the place of butter, is being put on the British market. It is called vegetable, and is nothing else than the oil extracted from Copra, refined, with all smell and taste neutralised by a patented process. It becomes sweet, like lard, and is intended to compete with margarine, and on the breakfast-table as a substitute for butter. A local factory has been at work for the past five years, and an effort was to be made to get hold of the British market through a Liverpool firm.

A new light, however, has been put on this statement that the so-called Cocoa-nut butter is a product alone of Germany, by a letter communicated to the *Journal of the Society of Arts* in the early part of August, from an English firm having their works at Silver-town, in which it is stated that the product was originally invented and manufactured in this country, and this, indeed, at Silver-town, and so large has the trade now become, that a second factory by the same firm has been established at Liverpool. It is pointed out that in this particular industry our continental rivals have failed to secure the lead, and that the output of the two English factories is believed to be greater than that of all other makers put together.

Cocoa-nut butter in English trade is known as "Nacoline," while Cocoa-nut suet is called "Vejsu." The first appears in store lists, and is quoted at a price lower than cooking butter, for which it is said to be preferable. It is remarkable that this product is reported to have become much in demand amongst vegetarians, Jews, Mohammedans, who prefer vegetable to animal fats, either on account of their guaranteed purity, economy, or by reason of their religious faith.

There is one thing certain, that if the fresh oil is always used and not expressed from very stale Copra, a wholesome oil is thus guaranteed, and moreover, considering the enormous quantities of Cocoa-nuts that are always arriving, both for the sake of the oil as well as for the fibrous husk or coir, there is no fear of a failure in the supply of material. The two photographs showing the collection of Cocoa-nuts in Zanzibar (figs. 135, 136) will, to some extent, bear this out. They were received from Mr. Lyne, of Zanzibar. John R. Jackson.

SOUTH AFRICA.

JOHANNESBURG.

GERBERA Jamesoni has flowered splendidly this season in the park. An old clump which has been undisturbed for three years had fifty intense crimson flowers open at the same time; they remain in good condition for nearly a fortnight, and last several days when

cut and placed in water. I consider this plant the finest herbaceous Composite we have in the country. Although a native of the Komati Valley and near Barberton, at an elevation of 2,000 feet, and growing in company with the fine tropical crimson-flowered *Bauhinia Galpini*, yet the *Gerbera* is perfectly hardy here at an elevation of 6,000 feet. It is not particular as regards soil, but likes all the heat and moisture obtainable during the summer. In winter when it is leafless and at rest, the roots must be quite dry, otherwise it will speedily perish.

Thanks to the very heavy rain, this past (October) month, 5·43 inches, *Paulownia imperialis* and *Catalpa speciosa* have bloomed very well indeed. To most people here, whose knowledge of street trees is limited to *Acacias*, *Eucalypti*, and English Oaks, it comes as a surprise to many persons to be told that these two fine trees are much used in the streets of Paris and other European towns. We hope in the near future to see greater variety in our street planting. Planes in particular ought to be planted, as a few specimens in our streets have done remarkably well.

Owing to the mildness of the past winter—21 Fahr. on the night of July 19—many plants which in severe winters are badly cut, now look in a fresh and green condition. *Grevillea robusta* did not lose its leaves; the young shoots of *Araneuria brasiliensis* are quite fresh; *Eucalyptus robusta* lost a few leaves only; but *E. citriodora* was cut to the ground, as it always is. *Bougainvilleas* on sheltered walls came through all right, but in cold situations they suffered badly.

After eight years' experience as a planter here, I can speak with confidence on the condition of some coniferous trees. *Pinus insignis* and *P. Pinaster* grow with amazing rapidity. I doubt it anywhere in the world the first-named tree grows so fast as it does here; and in such perfect health, too—green from top to bottom, and the young shoots never frost-nipped. I should like to know the value of its timber. *Cupressus macrocarpa* is the best hedge-plant we have here—6 to 15 feet high; just as good as an English Yew-hedge. Single specimens are very handsome, and common. *C. Lawsoniana*, though less rapid in growth, yet promises very well. In sheltered spots, *Cryptomeria japonica* is developing very well, as is *Sequoia* (*Wellingtonia*) *gigantea*. *Cedrus Deodara* has a great future in this country, I verily believe; our deep, moist sandy loam suits it to perfection. *Pinus camariensis*, *P. halepensis*, *P. strobus*, and *Juniperus bermudiana* also do well.

It is much to be desired that *Pseudotsuga Douglasii* should be given a fair trial, extending as this tree does from Vancouver to Northern Mexico, and found to thrive in Europe from Perth to Tunis, we have good reason to believe it would also feel at home on the high veld. Vast quantities of true "Oregon" have been imported for mining purposes, together with "Karri," *Eucalyptus diversicolor*. This last will no doubt do well in warmer parts of the country where frost is unknown, as in the Rustenberg district. R. W. Adlam, *Joubert Park, Johannesburg.*

HORTICULTURE AT THE CAPE.

The Cape Peninsula is verily a gigantic flower-garden, not to be matched by any similar tract of land in any other part of the wide world. It has been estimated that the Cape Peninsula alone has more species of plants on its hills and flats than any single country in Europe; while taking South Africa as a whole, an opinion may safely be hazarded, that its species of bulbous plants exceed in

number those of all the countries of the world combined. Of all countries of the world this is best entitled to be called "The Flowery Land."

In gardening a knowledge of botany is not needed, neither is it necessary to enter into the abstruse research of how plants feed, or to learn such big, jaw-cracking words as *Phanerogamia* or *Cryptogamia*; but to have a beautiful garden one should possess a knowledge of his soil, and of what it is capable of being made to do; as also whether flower-beds or borders should be higher or lower than the garden-paths, with a knowledge of manures and their uses, also when and how to apply them, with a very intimate appreciation of the uses of the watering-can and the hose. The difference between a good and a bad gardener consists in the judicious application of water, the keeping of the surface-soil free and open, and the knowledge how many plants can be grown on a given space, so that they may be equally fed and have sufficient room to expand as individuals. These are all practical matters, easily learned through the eye, and not soon forgotten. Once the rudimentary knowledge has been mastered, then the more leisured may be led to a study of botany and vegetable physiology, &c.

The Cape Peninsula has a winter and spring as balmy as the most perfect summer in Britain, and it is during these months that gardens should be at their very best, and this accomplished at a trifling cost, considering the return in pleasurable exercise and a healthy pastime.

Before closing this letter, it will be out of place to make a useful definition or two:—An amateur gardener cultivates flowers for his own enjoyment. A gardener represents skilled labour of an exceptionally high order; for three to five years he is an apprentice, then for two or three years a journeyman, three years a foreman, and at twenty-five to thirty years of age he is supposed to have had sufficient experience to take a head gardener's situation, supposing he has made a good use of his time in study. He frequently has some acquaintance with botany, but seldom attains to the position of being a botanist. A garden-labourer is a man who does the rough work about the garden, such as digging, weeding, and assisting generally; he seldom attains to the position of gardener, but may become a handy man about a house—clean boots, fetches coal and wood, looks after a horse and carriage, &c., and fills up his time in the garden. A botanist is a scientific man who has had a University education—he is very seldom a good amateur gardener; his time is mostly occupied with plant mummies, and is a most useful man to the gardener and nurseryman in giving names to plants, and to the State in settling all questions of plant life. ("Cape Horticulturist.")

MANGOS.

As Mr. Jenman, Government Botanist, and Superintendent of the Botanic Gardens, British Guiana, rightly says in his Annual Report for the year 1890, p. 47:—"What a diversity of flavour there is in the very large number of varieties of this fruit! How delicious the good kinds, how worthless the inferior ones! Few persons, I take it, who have never been to tropical countries, where the Mango flourishes, know the fruit beyond the name."

In this island, the tree grows spontaneously now; when it was first introduced, it would probably be hard to say. Our poorer people partly live on the fruit when in season, and at that time many shopkeepers feel a difference in the number of their customers. "Calviny"

is the commonest kind; it grows into a large timber-tree, and a single tree bears in some instances hundreds of fruits. Interior grades have a lot of tow-like material mixed among the flesh, and this, in itself, is an objectionable character, but, added to this, there is a strong taste of turpentine. Such remark applies to many others. Those which Europeans prefer—and which rank in flavour with the Peach and Nectarine—have no strings, or if they have, they count for little. The turpentine flavour, although perhaps slight, pervades to a degree many of the high quality fruits.

In Grenada, there are several good Mangos distributed over the island. The better kinds are known as "grafted Mangos." We work

a meagre one, as only the best are allowed room, and those seem generally shy setters. Of the recognised dessert kinds, few set many fruits each season, and this year has been no exception. "Grenada-Ceylon No. 1" is of the first rank, not only in appearance, but also in flavour. The fruiting tree which we have come from the Demerara Botanic Gardens in 1891, and from accounts it is a doubtful question whether it originated as a seedling or an inarched plant. This variety has fruited freely for the past three years; its first fruits were borne in 1898. We can in no way meet the demand for inarched plants or for fruit.

In the *Annual Report* on this station for 1898, paragraph 12, p. 1, it is recorded:



FIG. 136.—BOY CLIMBING A PALM-TREE TO GET DOWN COCOA-NUTS, ZANZIBAR. (SEE P. 119.)

up sets by means of inarching. In Martinique, I understand, cultivation is oftentimes carried on in tubs with success, and a plant but a few feet high ripens large crops. It would be extremely interesting, if someone who may have adopted the system satisfactorily, would give details. The Mango-tree in this colony is a martyr to "black blight," and in the distance looks like large objects covered with soot. Several grafted (inarched) plants which were obtained from the Trinidad Botanic Gardens in November, 1895, of good kinds for planting in the grounds of Government House, St. George's, have become well established, some of which have been fruiting sparingly for the past two or three years; one of them at the present moment, a tree 12 feet high and 7 feet through, had twenty-four half-developed fruits upon it.

The crop of the botanic station is invariably

"Mango Ceylon No. 1 flowered March 23, and ripened its first fruit June 28. . . . Fruit of the Ceylon No. 1 that were sent to New York arrived in good condition, and were stated to be the finest Mangos ever placed on the market there."

The best of all is the one known by the name of "Peters"; but "tastes differ." Whether it has other names I cannot say. In flavour and appetising odour it reminds one of the Peach and Nectarine, and is of medium size.

Some of my friends who know the tropics take great interest in going to Bristol on purpose to buy Mangos from the Jamaica consignments which now find their way to that English port. Had the Mango tree no other beneficial character, it would still stand out a boon to mankind as a shade-tree during dry and hot weather, as it does not shed its leaves. *W. E. Broadway, Grenada, W.I., July 15, 1901.*

THE GREAT MARKET.

COVENT Garden Market in the twentieth century presents a totally different aspect from what it did in the early part of the nineteenth, when it consisted chiefly of what were commonly called "shanties." One of these shanties was on removal placed in the farmyard of Mr. Hawke, of Deptford, of champagne-Rhubarb fame, and used by him as a granary, and was in that position when seen by the writer when on a visit to the late Mr. J. O. Wyman, who occupied the premises after Hawke, about forty years ago, and who also used it as a granary. The market buildings are still being added to, so far as regards the conservatory at the east end, the additions being intended for market offices. They are being constructed of stone, by Mr. Bush, an eminent builder, and harmonise generally with the architecture of the rest of the building. The other extensions, which are considerable, are situated on the south and east sides, and have already been described in this journal. The trade of the Market grows continually, and as an illustration of the magnitude of the transactions, it may be mentioned that one leading salesman disposed of upwards of fifty tons of home-grown hot-house Grapes in the week preceding last Christmas, as many as twelve tons being sold in one day.

There are found, as usual at this season, great stocks of the Holly, Mistle, Spruce Firs for Christmas-trees, and various plants and flowers for decorative purposes.

The flower market is always a pleasing sight when seen in the early morning, and to a stranger visiting London for the first time to see this market in the early morning in the summer months is a sight not readily forgotten.

The Potato market has been abundantly supplied. The quantities coming into the market have been estimated by some at a million tons, consequently prices rule low this year. Some of the black (Fen) land tubers are of excellent flavour. New Kidneys from Algiers and Teneriffe are now coming.

The supply of fruit, English and foreign, is abundant, and home-grown Grapes are at all times to the front, none surpassing them. The supply of Pine-apples is chiefly from St. Michael, from which place large quantities are imported, the variety being chiefly Providence. Of Peas there are English, French, and Californian to be purchased, the leading varieties being at this season Glout Morecan and Easter Beurre for dessert, and Catillae for stewing. Among Apples, home-grown fruit is unequalled for flavour, and Cox's Orange Pippin, Ribstons, King's, Court Pendu Plat, Blenheim, Wellingtons, and a variety of others, including Californian and Nova Scotian. The Apple supply is practically continuous the year round.

In addition to English Grapes there are Belgian, Lisbon, and the old well-known Almeria, which come in barrels packed with cork-dust. Of Nuts, there are our well-known Kentish Cobs and Filberts, French and Italian Chestnuts (the latter the finer), Walnuts, Brazil, Almonds, Barcelona, Sapucaia, &c. Lychees arrive all the year round, Oranges from Jaffa, Jamaica, Denia, Murcia, Lisbon, Teneriffe, Tangiers, &c.; Lemons from Malaga and Naples; Persimmons, Pomegranates, Custard Apples, Cranberries, Dates, Figs, &c.; Bananas from Teneriffe and Jamaica, the trade in which fruits has grown to an enormous extent; English and Foreign Tomatoes, the chief supply of which come at this season from the Canaries, whence they come in large quantities and in splendid condition in boxes known as "deeps."

Vegetables are plentiful, and consist of Kidney Beans, home-grown, and also from Madeira; Seakale, Broccoli, Cauliflowers, Brussels Sprouts, Asparagus, Spinach, Cucumbers, Celeriac, Cardoons, Chicory, Globe and Jerusalem Artichokes, Mushrooms. Roots are good, viz., Carrots, Turnips, Parsnips, Beetroot; Celery, washed and unwashed; Colewort and other Cabbages, Savoys, Scotch Kale, Turnip-tops, &c.; among salads there are the ordinary salad, Rape, Cress, Mustard, Endive, Batavian, Barbe de Capucine, &c.

The baskets and bags in general use in Covent Garden and other Markets of London are the following: the "pad" or "pot," of an oval shape with a lid and two handles, having a capacity for 1 cwt. of Potatoes, for which it is extensively used when Potatoes are young. The next with a lid and two handles, the "bushel flat," is in general use for Cucumbers and hot-house Grapes, and by many in the eastern counties for Apples, Pears, Plums, Greengages, Damsons, &c.; next comes the "round sieve," a reputed bushel equal to holding $\frac{1}{2}$ cwt. of Potatoes, and it is also used for carrying Apples, Pears, and such vegetables as Spinach, Broccoli Sprouts, Jerusalem Artichokes, and others. The basket which is probably in use more than any other is the reputed half-bushel, generally called a "sieve," in use all the year round for new Kidney Potatoes, Gooseberries, Cherries, Currants, Plums, Damsons, Apples, Pears, Cobnuts, &c.; and such vegetables as Brussels Sprouts, Jerusalem Artichokes, New Zealand Spinach, &c. Next is the "peck," usually a rimmed basket in general use for marketing Strawberries and Tomatoes, which holds 12 lb. of Tomatoes, which is the usual quantity packed in them. There are likewise a few crates which vary in size from 3 to 1 bushel capacity, in use for the carriage of Broccoli, Cauliflower, &c. The sack is made to hold $1\frac{1}{2}$ cwt. of Potatoes, or $1\frac{1}{2}$ cwt. of Carrots; then the "bag" which is used more extensively, will hold 1 cwt. of Carrots, Turnips, Parsnips, or Onions, and each year it is shown that these bags are becoming more popular as vehicles for these vegetables than the bunch, besides being a great saving in labour. The "bag" is also in general use for Brussels Sprouts, tops, Turnip-tops, Colewort, and other greens; and it has the advantage of being light in weight, and not expensive to purchase, and it is now always in use for Peas when these are coming in large quantities. T.P.

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Dendrobiums.—Many of the early-flowering species have advanced flower-buds, and if it be desirable to have plants in bloom in succession, the plants that are in the most forward state should be placed in warmer quarters. If the stock of plants is inspected once a fortnight, and the more forward ones selected, flowers may be obtained during many weeks. The plants should not be placed at once in a high temperature, but gradually brought into bloom, so that by the time they reach the warmest house the flower-buds may be discernible. If placed in a very moist warm-house direct, growth will be produced instead of flowers, which will be unsatisfactory and disappointing.

Cattleya Aclandiae.—Importations of this miniature and interesting species are welcomed by cultivators of Orchids interested in hybridisation, or who wish to replenish or add to their collection. C. Aclandiae seems to be

an Orchid which requires something that we cannot supply under cultivation, and it declines in vigour after some years. I have had charge of plants which grew satisfactorily for four or five years, and then made weaker growth year by year until they became valueless. If a plant of this species has borne a seed-vessel in the period previously to deterioration setting in, the chance of recovery is considerably diminished, and the plant rarely regains its normal condition afterwards. The plant never succeeds if a large quantity of compost be used about it, and is most satisfactory when placed on a teak raft and suspended in the moister part of a warm-house or plant-stove. Whilst growing the plant should be dipped frequently and syringed, like the ordinary inmates of the house; but during rest, only as much water should be applied as will keep the foliage plump.

Hybrid Cymbidiums.—C. s. Wiminium is not, perhaps, one of the most striking of Cymbidiums, but flowering as it does in the winter, it is a plant worthy of cultivation. A small plant soon grows into a large specimen. It succeeds in the cool intermediate-house throughout the year. The plant should be potted as soon as new roots appear, and the compost used may consist of turfy peat two parts and sphagnum-moss one part, together with a small quantity of loam and sharp sand. C. s. Lowio-eburneum are not so distinct as was at one time thought to be the case, and the quality of the flowers depends greatly on the methods of cultivation pursued. The plant should have a reasonable lengthy rest period. The flowers appear fairly early in the winter, and growth, which is rapid, takes place during the summer, and is ended by the last week in August. It is at that season that attention is needed, or a second growth may take place. The plant should remain dormant till the month of December, and during that period not much moisture should be given, and the ventilation must be ample. The flowers appear in that month, and it should then be placed in full sunlight in the cool intermediate-house.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Pruning Peach and Apricot-trees.—These trees require almost similar pruning to the Plum, with the exception that it is not desirable to prune the Peach so as to induce fruit-spurs to form, although a few on a tree are desirable. With this object in view, the shoots for which there is not sufficient space for laying them in, may be shortened to three buds. Assuming that the shoots which bore fruits were removed after the crop was gathered, the work will now consist of the removal of shoots too thickly placed, either entirely or partially for the formation of spurs. Apricots may carry more fruit-spurs than Peaches, otherwise the pruning should be on the same lines. Before the trees are tied or nailed they should be thoroughly cleansed of scale if any be present, brushing the branches with Gishurst Compound-soap or petroleum emulsion, using warm water and a soft brush, and drawing the brush in the direction of the buds. Where the trees are free from scale, a spraying with the soda and potash solution not stronger than advised for Cherries will suffice.

Bush fruits.—The pruning of the Gooseberry and Currant may now be carried out, and in pruning the former, the close spurring-in system is not so generally carried out as formerly; but some of the larger branches are entirely removed, and more young wood allowed to remain for the production of a heavier crop of berries. The branches removed should be severed at the base, and the thinning should be such as will allow of the fruits being readily gathered. Gooseberries vary much in habit of growth, some naturally being erect, while others are of a more or less pendulous habit, and the pruning given the bushes should be that best suited to that habit.

Pendulous varieties should have the lowermost shoots, which, if left would touch the ground in the summer, removed entirely or considerably shortened. Red and White Currants may be pruned rather harder than Gooseberries, spurring in the lateral shoots to two or three buds, and allowing the leaders to extend at various lengths according to their position and the sizes of the bushes, large ones being restricted. In old bushes strong shoots should be allowed to grow up from the bottom, and a corresponding number of the older ones removed annually. Black Currants should be pruned differently, the young shoots not being shortened, excepting the very weak ones, and the aged and the least fruitful branches thinned in numbers, cutting them away at the ground level, and doing this with moderation. Strong shoots arising from the roots should be slightly topped to induce the formation of laterals. Free growth should be developed by surface manuring; bushes of strong growth not being so subject to attacks of the Currant-bud mite, *Phytoptus ribis*, as are those of weakly growth. After the completion of pruning, Gooseberry and Currant-bushes should be dressed with some mixture to prevent birds from taking the buds. One of the best for this purpose is the mixture of quassia, used at the rate of half a pint of the extract to 3 gallons of rain-water, with a little fresh lime and soot added, which, when well mixed and strained can be syringed over the trees or applied with a garden-engine. The dressing should be repeated occasionally during the winter and spring, especially after much rain.

The Protection of Fig-trees.—The embryo fruits of the Fig being destroyed if exposed to severe frost, the branches should be unfastened and brought down, and made secure near the ground with Russian mats, straw, or thatched hurdles. Where the latter are used, the covering may remain off as long as mild weather lasts, and in case of sharp frost it may be quickly placed over the branches. When the trees are being unfastened, the required pruning should be attended to, which consists in removing old branches, and reserving young shoots of a short-jointed, firm nature to bear fruit.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to SIR CHAS. TENNANT, The Glen, Inverleithen, Peeblesshire.

Peaches and Nectarines.—The time is at hand when Peach-houses should be cleansed, painted, and put in good order. No other fruit-trees under glass are so liable to be infested by insects as the Peach and Nectarine; mealy-bug, red-spider, scale, thrips, and green and black-fly live on them. A weak solution of petroleum is the best preventative of attacks from black-fly, and it is equally as effective against the other insect pests; and great points in its favour are the ease with which it may be applied, and the saving of labour, while for cheapness it is within the reach of everyone. The proper time to apply the remedy is after the pruning of the trees is finished, and again when the trees are fastened to the trellises. The water should be heated to at least 112°, even 5° higher will do no harm, and to every 3 gallons of water three wineglassfuls of common petroleum should be added. Soft-soap is sometimes added, but I do not think this is of any real value in rendering the petroleum more mixable with water, or as an insecticide. The water must be hot for it to have any effect. Keep two syringes going—the one constantly and with some force discharging its contents back into the vessel, the other wetting every part of the tree. If only one syringe is available, every other syringeful must be returned into the vessel, in order to keep the oil from floating on the surface. Used as advised, this is one of the best and most harmless insecticides, and when applied to the trees, the mealy-bug, scale, and other insects disappear in a very short time. Should there be any black aphides lurking around the roots of the trees, what runs off is

certain to destroy them. The roots are not injured in the slightest degree by the hot-water and petroleum. It is such a simple and safe remedy that it may well be annually applied to the trees, even if they are seemingly quite clean, on the principle that prevention is better than cure. The woodwork and glass ought to be thoroughly cleaned, giving the former, if time admit, a coat of paint, and the back walls one of lime-wash; the trees can then be tied to the trellises.

Young Pot-Vines.—Those intended to be grown into fruiting-canopies may be cut back close to the soil, above the second or third eye, dressing the wound with Thomson's styptic; afterwards be placed in ainery that will be started early next month. Vine-eyes may be inserted in small pots or in small squares of turf, and be kept cool for two or three weeks before placing them on bottom-heat.

Cherry-house.—The trees having been properly attended to as regards pruning and dressing them, the house may be closed forthwith, and not affording a treatment that will excite growth prematurely, but aiming at a very slow progression, a temperature of 40 at night, 45 in mild weather, and 50 in the day being afforded by artificial means, and a few degrees higher when the outside conditions are favourable; but anything calculated to bring the trees on quickly must be avoided. Ventilate at 50, just a little at the top of the house, to ensure a change of atmosphere, ventilating freely at 55, allowing an advance to 65 or 70 by sun-heat, and closing at 55. By syringing the trees occasionally a moderate degree of moisture will be obtained, but in all cases allow the trees to become dry before night. The borders must be maintained in a moist state, for as soon as the trees begin to grow, fresh roots speedily form, and moisture is then very essential.

THE KITCHEN GARDEN.

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

Spinach.—In gathering this crop the largest leaves should be the only ones taken, and these not too closely now that growth is slow; the soil should be frequently stirred with the Dutch-hoe when in a fairly dry condition. Succession crops may be afforded a moderate dressing of wood-ashes and a light hoeing.

Peas and Beans.—When the plants have pushed through the soil, sprinkle them with a mixture of lime and fresh soot, and when a few inches high mound them with the draw hoe up to the lower leaves, and as the plants grow afford a little more soil, also stick in evergreen twigs on the windiest side, but not so many as to block out the light. Peas withstand a considerable degree of frost, but the northerly wind cuts them greatly. Traps should be set a few feet apart if mice interfere with the plants.

Lettuce and Endive.—Ply the flat hoe between plants in the open ground when the latter is dry, and afford air freely to those under glass, but keep the plants dry, and apply protection when there is much frost. Endive succeeds under like treatment, though the plants are much harder than Lettuces. Remove decaying leaves from both, damp soon spreading among the plants at this time of year, though we have been favoured with exceptionally fine weather during the past six weeks.

Water-cress.—In some families Water-cress is in daily request, and where no proper beds or natural watercourses exist, plants should be lifted with roots attached from ponds or watercourses, and planted on the border of a late vinery or orchard-house, from which frost can be kept out, applying water and air freely.

Routine Work.—Pea and Bean sticks should be cut and brought in, trimming and pointing the same when the weather is too rough for other kinds of work. When trimmed lay them

flat on the ground, or tie up in convenient bundles. Remove the remains of crops, such as the stumps of Broccoli, Savoy, and Cabbages; and wheel on manure, dig and ridge the land. See that the linings of hotbeds and the frames containing Asparagus, &c., are kept intact and well topped up, covering the lights at night with mats and litter. Collect fallen leaves in the pleasure-grounds for the making of hotbeds and filling unheated pits. In inclement weather examine the stores of Potatoes and Onions. Diseased Potatoes should be destroyed by burning, not thrown on the rubbish to set up infection anew.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HENNEY PACKE, Esq., Prestwold Hall, Loughborough.

The Conservatory.—The most of the large-flowering Japanese and incurred Chrysanthemums being now over, the plants should make room for any late-flowering varieties. The variety W. H. Lincoln is still one of the best late-flowering yellow, and the following are also of merit, viz., Canning, C. H. White, Golden Star, and Frank Wilcox. *Salvia splendens grandiflora*, with its bright racemes of scarlet-tinted flowers, forms a charming contrast to the yellow Chrysanthemums. As the *Salvias* go out of bloom the shoots should be cut back, in order to obtain young shoots for propagation, and be placed in a pit having 55 of warmth, without an excessive use of artificial heat. *Euphorbias* (Poinsettias), *Eranthemums*, *Eucharis*, *Zygocarpums*, and *Callas*, may be introduced, and provided care be exercised in affording water and in arranging the plants at the warmer end of the structure, they will remain gay for a considerable length of time. The Palms, *Camellias*, and other permanent occupants of the house should be cleansed as the work of re-arrangement proceeds.

Auxiliary Houses.—*Genistas*, *Acacias*, *Ephylliums*, and *Liliodias* may be afforded a few degrees more heat, so as to have the plants in flower when the Chrysanthemums have gone out of flower. Continue to propagate Chrysanthemums as fast as cuttings can be obtained. Any old stools which are devoid of young shoots fit for propagating purposes should be shaken out of the soil and potted in smaller pots in a compost consisting largely of road-grit, and placed in a house having 50 of warmth, when shoots will soon form.

The Forcing-house.—Continue to bring in regular relays of Daffodils, Dutch bulbs, Lily of the Valley, Lilac, *Deutzia*, *Azalea indica* and *A. mollis*, *Eupatoriums* and *Callas* may also be introduced, and be afforded frequently weak liquid-manure. Lay the plants in this house be syringed twice a day, and the temperature maintained at 55 to 60. The forwardest of the imported *Lilium Harrisii*, if such be purchased, will now be sufficiently well rooted to put into this house, and they should be kept constantly under observation, aphids readily attacking them. The best insecticide to use against this pest is the N.E. Oil, which is good likewise to use as a preventive of attacks.

Chlorodendron falax.—Cut back the old plants to about six eyes as they pass out of flower, and place them in the stove. When the new shoots form, and are of a length of 3 inches, take them off with a neck, and insert them singly in small pots, and strike in bottom-heat of 80. By this means larger plants are obtained than seedlings will make in one year. When rooted, shift into slightly larger pots, and place them on a shelf close to the glass, in a house having a temperature of 65.

Begonia Gloire de Lorraine. As these pass out of flower, let them be kept on the "dry side"; cut the tops over slightly, and put the plants in a house having 50 to 55 of warmth, syringing them occasionally. When cuttings can be obtained from the base, insert these as well as leaves having a bud at the base in quite small pots in a bottom-heat of 80 to 85.

Guard assiduously against damp by wiping the glass in the morning and affording air at night. Late-propagated plants may be grown on for another year so as to obtain larger plants. *Begonia Calcedonia* may be increased and cultivated similarly.

Canas.—After these plants have ceased to flower, lay the pots on their sides beneath the greenhouse stage, or shake out the roots, and store in boxes of dry soil or coal-ashes in a cellar or dry room having a temperature not lower than 45 to 50.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Rhododendrons.—In soils in which American plants succeed, established bushes which are getting over-large or unshapely may be freely pruned without injury. To do much pruning at this season would cause a loss of many of the flower-buds, but as the labour at command will not always allow of the work being carried out in the summer, this loss may be unavoidable. The cone is perhaps the most effective shape for solitary specimens, and there need be no hesitation in cutting the plants to that shape, though the pruning may have to be severe to effect this; but a season or two will generally put matters right. It may not again be out of place to state that a special preparation of the soil for these plants is not always necessary, although when plants have been growing in peat and they are transplanted to a loamy soil, little growth will be made for two years afterwards; but once established, growth is rapid. I think, however, that in peaty soil the growth is shorter and firmer, and more flower-buds set than in a loamy one. Among recent introductions Helen Schiffler is hard to beat as a white-flowered variety; Princess of Württemberg is of a distinct compact growth, not so showy as some of the larger-flowered varieties, but perhaps one of the most distinct of the spotted flowers; Pink Pearl is promising; while for a glowing colour, Martin Hope Sutton is very fine.

Azaleas, mollis and pontica, &c.—There is one advantage which these plants have over Rhododendrons, in that they give bright leaf colouring in the autumn. The brightest in leaf colour is the old Ghent Azalea with yellow flowers. While these plants are admirable when planted in beds and at the margins of shrubberies, they afford the finest effects when planted on the slopes of small streams or on the sides of ravines, the effect being very good when viewed from above, whether in late spring when in flower, or in the autumn when the leaves are changing colour. These plants need no specially-prepared ground, a sandy loam suiting them as well as does peat.

Berried plants.—Among these, *Perrottia micromata* should have a place, the coloured berries of the varieties of this plant having a pretty appearance in the winter. The plant is often recommended for planting on sunny banks and in peaty soil, but it does not appear altogether necessary, as it will grow in any soil which is fairly heavy if some leaf soil be incorporated with the staple; and it also thrives in fairly moist land. *Cataglyphis pyramantha* and the variety *Lelandi* are fine-berried plants, very pretty when grown as pyramids or bushes in the open, and also as wall plants or for forming arbres. In severe weather some frugivorous birds take the berries. The plant is not particular as to soil. *Berberis* as berry-bearing plants are useful and decorative, viz., *B. vulgaris*, *B. aristata* and *B. Thunbergii*; these, while not grown solely for their berries, give variety in the autumn, and thrive in any fairly good soil. Of *Cotoneasters*, *C. Sismosii*, *C. huxifolia*, and *C. rotundifolia* are desirable sorts; and *C. microphylla* is suitable for planting on slopes and banks. *Skinmias* should be planted, the male and female forms in proximity to each other. The plants make nice subjects for small beds, and they likewise are not very particular as regards soil.

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

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

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

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

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

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

SALE FOR THE WEEK.

MONDAY, DEC. 23.—

Bulbs, Border Plants, &c., by Protheroe & Morris.
(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—38°4'.

ACTUAL TEMPERATURES—

LONDON.—December 18 (6 P.M.): Max. 13°; Min. 3°.
December 19.—Frosty; slight fog.

PROVINCES.—December 18 (6 P.M.): Max. 45°, Scilly; Min. 33°, N.E. Scotland.

Covent Garden Market in the Christmas Season.

DURING the present week the Christmas trade in Covent Garden is in full swing. The full flush of the fruit trade may be said to commence on the 16th, the plant trade two days later, the cut-flower trade on Saturday, December 21, and it continues to the 23rd and 24th. How much of material passes in and out of the market in that time can perhaps be only conjectured—it must be of enormous bulk.

Home-grown fruit is represented very finely; White Muscat, Gros Colmar, and Alicante Grapes are offered at prices which fall greatly short of what ruled a quarter of a century ago, when the supply was scarcely equal to the demand, and Grapes had a much higher value.

Of English Apples there are very fine Blenheim Pippins, also Fearn's, King, and Ribston Pippins, and some of Non-such. There are some English Pears, but the bulk is of French growth. Bananas from the Canary Islands are in plenty; and splendid Pineapples from St. Michaels. Oranges are in great numbers, and there are Nuts of many kinds.

Chief among plants are the late-flowering Chrysanthemums, such as Princess Victoria, Niveum, Western King, and what the market growers regard as the finest late white of all, Mlle. Thérèse Pankoucke, which is naturally so late that the blossoms last over until February; with the well-known L. Canning. All these are white-flowered. The popular yellow variety Phobus is about over, but W. H. Lincoln is yielding a good supply; some blooms of the former may yet be seen at Christmas. The favourite pink-flowered Chrysanthemum is Madame Félix Perrin, known also as Framfield Pink; it is one of the best market varieties, and its flowers are good up to the middle of January.

Orange and bronzy tints are found in Lord Brooke, and in Tuxedo, considered by some to be a dark orange sport from Lord Brooke, and when bloomed from terminal buds, can be had in January. Mr. Cooper is a dark red variety, of value as supplying a warm tint late in the season.

Other flowering plants are Cyclamens, Azaleas, represented by the double white Deutsche Perle, and one or two others; Astilbe japonica, Liliun longiflorum, and L. speciosum, all three retarded; Chinese Primroses; Marguerites, the white only; Erica hyemalis, and its white variety gracilis, though it is nearly over; and Caffra, which has the merit of being sweet scented.

Of foliage plants there are Palms, most prominent being the Kentias and Livistonia chinensis (Latania borbonica); such Ferns as Pteris cretica cristata major, P. Wimsetti, P. tremula, Polypodium aureum, Nephrolepis exaltata, Adiantum, used as much as it is possible to do so at this season of the year; Asplenium, principally bulbiferum; and Cyrtium falcatum, known in the market as the Holly Fern. The Aspidistra is largely used, and some of the narrow-leaved Crotons for their bright colours; the principal variety of the broad-leaved section found in the market at this season of the year is Queen Victoria. The Poinsettia, with its rich carmine bracts, and the ruddy-berried Solanum, may be included in this category.

The leading cut flowers comprise Chrysanthemums, cut from the varieties we have named; Richardias, Liliun longiflorum album, and L. speciosum; Camellias, mostly white, as it is said to be almost impossible to get coloured Camellias into the market; Eucharis, scarlet double Pelargonium, mostly Ra-pail; with Hermione, white, also double; Lily of the Valley, Poinsettias, Roman Hyacinths, Roses, the white Niphetos principally; some Narcissus obtained from Somerset, grown in boxes, and which must be started very early to have them in flower at this time of the year; and some N. maximus also. All the foregoing may be said to represent home production.

From the Continent, and mostly from the south of France, come Polyanthus-Narcissus, paper-white, and Soleil d'Or, white Lilac, a very pretty double pink Anemone; bloom of a yellow Marguerite, named Reve d'Or, and others about three varieties. Of Violets there are double and single, the latter, probably the Russian, packed perfectly dry in low chip hampers, forty-eight bunches in a hamper, and when they come to hand are perfectly fresh, they have retained their perfume, and will stand for three or four days; English-gathered Violets do not stand so well as these.

Then there are double Parma Violets, mainly blue, and but few white, with Acazia mimosa just coming in. Safrano Roses are coming over from France, their brilliant copper tints being seen in the windows of the shops of the decorative florists; bloom-on short stems come over in pads, about two hundred and fifty blooms in each, and the same variety is also seen in selected bloom-on long stems, about twenty-four being carefully packed in a basket.

Holly comes up from Kent and Sussex, mainly from the former county, gathered from its abounding woods. It is generally well berried this year. The ruddy glow of

its fruit is much appreciated, seeing that very little of the yellow-berried varieties come into the market.

The supply of home-grown Mistletoe is a declining quantity, though formerly, it is said, a great deal came to the centre from the Apple orchards of Herefordshire. We are informed that scarcely a hundredweight of English Mistletoe comes into Covent Garden; the supply coming from the West of France.

The gardener is thus strongly in evidence at the Christmas season; fruit and flowers are indispensable to our Christmas festivities. He is the representative of a huge industry, the extent of which we can only imagine.

*** * * OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1902. 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.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Prince of WALES has consented to become the President of the Gardeners' Royal Benevolent Institution, in succession to his Majesty the KING, who is now Patron of the charity.

PUBLIC SPACES IN FULHAM.—A part of Southfields Nursery, lately occupied by Messrs. JAS. VEITCH & SONS, has been purchased for a park for the parish of Fulham. Various other open spaces in this parish have been rescued from the omnivorous builder, and will secure some amount of fresh air.

THE BOTANICAL SOCIETY OF BELGIUM.—M. CRÉPIN having resigned his post as Secretary, has been elected Honorary President, "Président d'Honneur," and M. DURAND replaces M. CRÉPIN as Secretary. These two appointments were made by "acclamation."

"THE ANNALS OF THE ROYAL BOTANIC GARDEN, CALCUTTA."—The ninth volume of this important publication is devoted to "A Second Century of New and Rare Indian Plants," by Sir GEORGE KING, Mr. DUTHIE, and Major PRAIN; illustrated by ninety-three lithographic plates. The frontispiece, a "photogravure" illustration of Albizzia Richardiana, is particularly successful. The plants illustrated are mainly, but not exclusively, of purely botanical interest. Among them are some which will make the plant-lover's mouth water, and it is to be hoped that if they have not already been brought under cultivation they soon will be. Three or four species of Meconopsis are particularly striking, such as M. grandis of Prain; it has tufted, coarsely-toothed, radical, remotely-toothed leaves, and deep blue flowers, 12 cent. in diameter. It is a native of Sikkim on the Nepal frontier, where it is grown for the sake of the oil expressed from the seeds. M. bella, Prain, is a dwarf species with leaves like those of a Corydalis; flowers 4 cent. across, with blue petals. M. superba is a magnificent species with sessile, densely-hairy, lanceolate leaves, and white flowers 10 cent. across; it is a native of the Eastern Himalaya, growing at an elevation of about 10,000 feet. Under Heritiera, it is pointed out that H. macrophylla and H. acuminata are worthy of specific rank, the latter being synonymous with BEDDOME'S H. papilio; while H. litoralis, a species commonly met with on the Indian shores, has not been found on the coast of Bengal, as stated erroneously by

MASTERS in HOOKER'S *Flora of British India*. Various Androsaces and Primulas look as if they would be desirable plants for introduction: whilst *Panicum longiflorum* is noted by the authors as being well worthy of more attention horticulturally than it has hitherto received. The work reflects great credit on its authors, and on the establishment under their charge.

CHARITY CONCERTS.—At a concert held on the 10th inst., under the auspices of the Altrincham and District Gardeners' Mutual Improvement Society, an announcement of which we published a fortnight ago, Mr. DAVID MORISON announced that since 1892, the society had raised by means of these annual concerts a sum of £400. Of this £165 had been paid to the Royal Gardeners' Orphan Fund, £140 to the Gardeners' Royal Benevolent Institution, and £70 to the local society's emergency and orphan fund. The recent concerts held on two successive evenings have been as successful as former ones.

"TRADE TOPICS" is the title of an advertising journal intended as a means of inter-communication between printers, publishers, newsagents, and stationers, and will appear weekly, at the price of one penny. Its contents may be said to consist of posters; and in the first issue before us, that for November 1, 1901, we have the title, the contents bill, or a summary of a great number of magazines for adults, boys, and girls; illustrated newspapers and journals; stationers' advertisements, &c. *Trade Topics* seems to fill a certain void in journalism, and such being the case, we wish it good-speed. It is published at Boswell House, Holt Court, Fleet Street, London, E.C.

CHRISTMAS WARE IN THE STREETS.—A round of the open-air markets at this season of the year is always of interest, more especially to such as are concerned with the Christmas well-being of the poor, as are our readers. Our last tour during the week now closed, proved that the supplies of fruits and vegetables are plentiful, good, and fairly cheap, and included Apples of many sorts, at prices ranging from 2d. to 1d. per lb.; English Grapes, 1s. to 1s. 6d. do.; foreign, 1d. to 6d. The favourite Banana sold at 6d. to 1s. per dozen; Oranges, two, three, and four a penny; Dates, 2d. per lb.; Chestnuts, good, 1d. and 2d. do.; Lychees, eight a penny; Pine-apples, at fair prices; Medlars, 3d. per lb.; Pears, 2d. per lb., and 2d. each; Lemons, two and three a penny; Figs, 1d. per lb.; Almonds (nuts), 2d. and 3d. per pint; Walnuts, 5d. per lb.; Tomatos, 3d. to 6d. per lb. The Pomme-graines seemed to have been sold clean out. The business being done was a very good one, the higher qualities being the favorites with the discriminating having money to spend.

"THE BOOK OF THE VINE."—This is one of a series of handbooks of much practical value to beginners in horticulture, being written by a gardener who has passed his time in many fine gardens in his native country, Scotland, and in England, where he has been resident for many years. In view of Mr. Barron's book on *The Vine and Fine Culture*, it will doubtless be the opinion of many that the last word has been said on the cultivation of the Grape-Vine as practiced under glass in this country by experts. For amateurs, however, a less exhaustive treatise is required, and

By H. W. Ward, formerly of Longford Castle Gardens. One of a series of handbooks on "Practical Gardening," edited by Harry Roberts, and published by John Lane, The Bodley Head, London and New York.

this is furnished in the present volume. The first chapter consists of a brief history of the Grape-Vine from the earliest ages of which there is any record; and in this connection the names of localities in England are given in which the Grape-Vine was cultivated in the open air with some degree of success, although we may reasonably have our doubts regarding its quality, "bouquet," strength, and general drinkableness in those rule times as contrasted with the requirements of the twentieth century. Mention is properly made of ornamental species of *Vitis*, and then follows a mass of useful matter dealing with the construction of vineries—a subject on which Mr. Ward may be heard with all respect. A useful list of varieties for planting in vineries expected to furnish ripe Grapes in the months of April and May, June and July, October and November, and those that may be kept through the winter till March, to which, we imagine, none will take exception, although most of us have favourite varieties. Varieties are briefly described, pests and diseases dealt with, and remedies given, so that the amateur will find his wants well provided for by a competent authority of great and varied experience.

PRESENTATION.—When it became known that Mr. W. MELVILLE, who for the last forty years has been associated with Glenlee Park, Galloway, as gardener and manager, was leaving the district, a movement was set afoot to procure a testimonial, and so liberal was the response that on Wednesday evening, Dec. 1, a deputation waited on Mr. MELVILLE and presented him with a handsome marble and bronze clock, a pair of silver candlesticks, and a purse of sovereigns; and to Mrs. MELVILLE a beautiful tea and coffee service. Provost COWAN, New Galloway, made the presentation, and expressed the hope that Mr. and Mrs. MELVILLE would long be spared to look on and use these mementos of their friends in the Glenkens, and enjoy the leisure they had so well earned after their long, useful, and honourable life spent in Glenlee glen. Mr. MELVILLE feelingly replied. During his long residence at Glenlee, Mr. W. MELVILLE carried out a great deal of ornamental and forest planting on the estate. For many years his services were much in request as a judge at flower shows in the south-west of Scotland.

TESTIMONIAL TO MR. RICHARD DEAN, V.M.H.—It has been suggested that a suitable date for the presentation of the testimonial would be February 1, 1902, which is Mr. DEAN'S seventy-second birthday. We understand a proposal will be made at a meeting of the subscribers, which is to be held early in the new year, that Mr. DEAN be entertained and the presentation made on that date. Meantime the subscription list is being kept open, and Mr. SHERWOOD will be glad to hear from any sympathiser at 152, Houndsditch, London.

OLD GARDENING BOOKS.—At a sale of rare books and manuscripts, at the rooms of Messrs. SOHBERY, WILKINSON, & HODGE, Wellington Street, on December 12, the works disposed of included *The Theory and Practice of Gardening*, by J. JAMES, of Greenwich, with plates and woodcuts, 1712, £2 6s.; *Gerarde's Herbal*, NORTON'S edition, 1597, 28 15s.; *British Herbal*, by J. HILL, 1756, £1 17s.; "Paradisus in Sole Paradisus Terrestris; or, a choice Garden of all sorts of Rarest Flowers, with their Nature, time of Flowering, &c.," by JOHN PARKINSON, 1656, 28 15s.; "Theatrum Botanicum, the Theatre of Plants; or, an Herbal of large extent," by JOHN PARKINSON, £2 11s.; "Lilies of Japan," beautiful plates in colotype, by K. OAWA, Yokohama (no date), 3s.; "A Curious

Herbal, containing 500 Cuts of the most useful Plants which are now used in the Practice of Physick," by ELIZH. BLACKWELL, 1739, 19s.; "Fragments on the Theory and Practice of Landscape Gardening," by H. and J. A. REPTON, numerous beautifully coloured and other engravings, most of which have movable slips showing improvements, 1816, £7 2s. 6d.; "Observations on the Theory and Practice of Landscape Gardening, with Remarks on Grecian and Gothic Architecture," coloured illustrations, by H. REPTON, 1803, £5; "The Compleat English Gardener; or, a Sure Guide to Young Planters and Gardeners," by L. MEARES, 1683; and "Experimental Husbandman and Gardener," by G. A. AGRICOLA, 1726, 16s.

DOGS.—The Board of Agriculture desire to draw attention to the fact that their Muzzling Orders hitherto in force in certain districts in South Wales, and their Orders imposing certain restrictions on the landing in Great Britain of dogs from Ireland, have now been withdrawn. There are now no districts in Great Britain to which muzzling orders made by the Board are applicable, and the free movement of dogs between Great Britain and Ireland is permissible. There appears to be good reason to believe that rabies has now ceased to exist in any part of the United Kingdom. The disease continues, however, to be very prevalent on the Continent of Europe and in most other parts of the world, and in order to prevent its re-introduction into the United Kingdom, and the possible re-imposition of muzzling orders, the Board have felt it to be their duty to adopt further special precautions as regards the detention and isolation of imported dogs. They have therefore issued a new Order entitled the Importation of Dogs Order of 1901, which requires, in effect, that every dog from abroad landed in Great Britain after the fifteenth of March next, shall be detained and isolated at the expense of its owner upon premises in the occupation, or under the control, of a veterinary surgeon, for a period of six calendar months from the date of landing. The Licence of the Board authorising the landing of the dog will contain provisions prescribing and regulating the manner in which the dog is to be thus detained and isolated. Without such a Licence no dog from abroad can be legally landed in Great Britain. Prior to the date named, the landing of dogs will be authorised on conditions substantially the same as those now in force, and owners of dogs already landed from abroad are reminded that the conditions of all Licences issued under the Importation of Dogs Order of 1897 continue to have effect, and that the isolation of dogs landed under such licences is still necessary. Dogs which have been landed in Great Britain from Ireland and are still being detained under the conditions prescribed by a landing licence, will be free from all restrictions as from the 21st inst., in virtue of an order issued on the 12th inst. by the Board. The new Order also regulates the detention of dogs on board vessels lying in ports in Great Britain. Special regulations will be issued regarding the transit of dogs brought from abroad through Great Britain for immediate exportation, and for the detention and isolation of foreign performing dogs. T. H. EDIALL, Secretary, Board of Agriculture, 1, Whitehall Place, London, S.W., December 12, 1901.

DEAN HOLE.—The November number of the *Book Lover* contains a chatty account of an interview with the Dean of ROCHESTER, accompanied by a photograph of the "Very Reverend" emerging from a mediaeval arch.

CEPHALOTAXUS.—It appears that we did not tell all the truth about that tangled mass of berry-bearing shoots on the *Cephalotaxus* at Powerscourt. What remains to be told adds materially to the interest. The shrub in question produces usually only male flowers, but every shoot in the tuft bore berries without any male flowers. Something, we know not what, caused an irritation, and consequently an increased flow of nutritive matter, as a result of which was the formation of an abnormal number of shoots, and the production of female flowers instead of males. The female flowers demand a larger amount of nutriment than the males, as may be witnessed in Vegetable-Marrows, where the flowers formed in the early stages of growth are males, and the female flowers are not formed till the plant gets established, and feels the benefit of an increased supply of light and heat.

"THE GARDENERS' MAGAZINE."—The Christmas number gives several illustrations of sundials, which always exert a fascinating influence on the spectator; a pleasant article on "Auvergne;" an acceptable note on "Plant Collectors," with portraits, which we gladly welcome; and various other subjects, including an almanack with a brave Peony by the side.

"AMATEUR GARDENING" also indulges its readers with a Christmas number, richly illustrated, and with a supply of freaks and marvels in the vegetable world, the records of which are generally considered as good reading at Christmas time.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are glad to be able to announce that the recent successful concert given by the "Hurst & Son" Musical Society, under the able conductorship of Mr. EDWARD SHERWOOD, in aid of the funds of this Institution realised a sum of £18 18s., a cheque for which has been forwarded to the Charity.

THE SURVEYORS' INSTITUTION.—At the ordinary general meeting held on Monday, December 3, 1901, a paper was read by Dr. W. SOMERVILLE (Associate), entitled "Artificial Manures." A discussion followed, and was concluded, and a vote of thanks was unanimously passed to Dr. SOMERVILLE for his paper.

—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, January 13, 1902, when a paper will be read by Mr. JOHN H. HANSON (Fellow), entitled "Rivers' Pollution: Purification of Trade Waters, from a Mill Occupier's Point of View."

CURRENTS FOR CHRISTMAS.—The other day, whilst in a fairly representative London "store," our attention was drawn to several samples of Currants, at once reminding us that Christmas was nigh at hand, and of the little panic last year over the *Peronospora* ravages, and the short supply of Greek Currants. Inquiry elicited the fact that there were three qualities on sale—one priced at 2½d. per lb., the next at 3½d., and the last and certainly best at 4d.; for the same quality they might be ranked as fair, very fair, and very good. Of Nos. 2 and 3 we ate, and were well satisfied. We are reminded also of the fact that, notwithstanding a threat, the hat was not sent round for those growers who suffered through the *Peronospora*; also today by some figures given on the authority of H.B.M. Consul-General in Greece, which tell us that the value of the Currants exported in 1899 was £1,520,000; last year the value of the much reduced crop exported was £2,112,000—a gain to the exporter of £592,000.

HARDY EUCALYPTS.—To Mr. RASHLEIGH, of Menabilly, Cornwall, we are indebted for specimens of Eucalypti which have proved to be hardy in his garden:—

EUCALYPTUS CORDATA, Labillardière, Mueller *Eucalyptographia*; tab. 78.

and does not alter the character of its foliage as it gets older.

In 1899 we received flowering specimens from Castlewellan, Co. Down, sent by the Earl of ANNESLEY. See also *Gardeners' Chronicle*, 1888, p. 803, fig. 111.

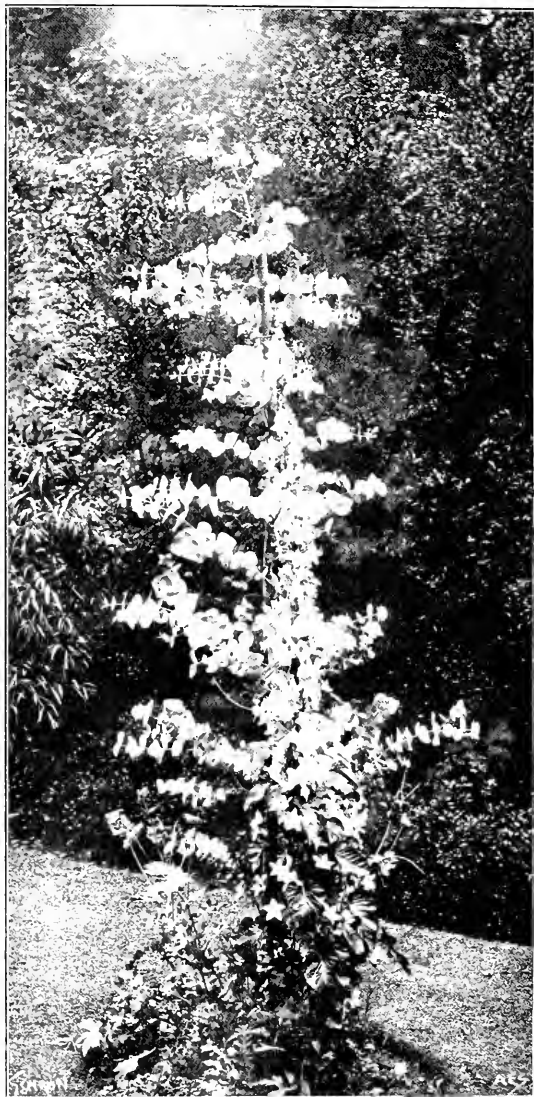


FIG. 137.—SEEDLING *EUCALYPTUS CORDATA*, RAISED AT ABBOTSBURY, 1894. PRESENT HEIGHT 18 FEET.

A Tasmanian species with sessile, cordate-oblong, glaucous, blueish leaves, about 3 inches long, 2 inches wide and stalked tufts of white flowers about ½ inches in diam. Fruits urn-shaped, truncate, about ½ inch long.

The largest tree at Menabilly is about 50 feet in height, and is very distinct in retaining its glaucous tint to the very top,

At fig. 137 we show a seedling plant of this species, raised in the Earl of Ilchester's garden at Abbotsbury, Dorset. The seed was sown in 1894, and the plant is now 18 feet in height.

EUCALYPTUS GUNNI, Hooker, Mueller *Eucalyptographia*; tab. 38.

A tree with slender branches and alternate stalked leaves; petioles slender, ½ to ¾ inch

long, blades about 3 inches long, 1 inch wide, oblique at the base, lanceolate, entire, glabrous. Flowers in stalked axillary groups of three peduncles about $\frac{1}{2}$ inch, pedicels very short, flowers $\frac{1}{2}$ inch, yellowish; fruits green, $\frac{1}{2}$ inch. This species is a native of Tasmania as well as of Victoria and N. South Wales. To this species belongs the tree which has survived so many winters at Kew, still sending out each spring new shoots to replace those killed by the previous winter's frost. See also *Botanical Magazine*, 1901; t. 7808. *Gardeners' Chronicle*, 1883, p. 437, fig. 65. At Menabbily the tree attains a height of 40 to 50 feet.

E. COCCIFERA. Considered to be synonymous with *E. amygdalina*. In the specimen before us the leaves are about 1 inch long on very short stalks; the blades linear, lanceolate, tapering to both ends. The fruits are in axillary groups of three, the peduncle about $\frac{1}{2}$ in. long. The fruits are top-shaped, flat at the top, about $\frac{1}{2}$ in. long. The trees at Menabbily (several) are from 50 to 70 feet in height, but not as fine specimens as the tree at Powderham Castle, Devon, figured in *Gardeners' Chronicle*, July 26, 1879.

The late Mr. EWBANK was of opinion that *E. resinifera* is the strongest and hardiest of all the species, much more so than *E. ficifolia*. At Menabbily Mr. RANLEIGH has planted about an acre with thirty-seven varieties of *Eucalyptus*, but his experience does not agree with that of Mr. EWBANK.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Royal Horticultural Society held on Tuesday, December 17, forty-two new Fellows were elected, amongst them being the Dowager Lady WILLIAMS-WYNN, Lady BINNING, Lady HARRISON, Lieut.-Colonel O. H. OAKES, and Captain CHICHELEY, making a total of 930 elected since the beginning of the present year.

EXAMINATION IN HORTICULTURE.—The Royal Horticultural Society's annual examination in the principles and practice of horticulture will be held on Wednesday, April 23, 1902. Intending candidates can obtain a copy of the syllabus on application to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster. A stamped and addressed envelope should be enclosed.

THE SURGEON AT KEW.—Most past Kewites have a distinct remembrance of the badges they wore upon the arm when on half-day duty upon Sundays, to impart to them an official dignity. These badges might be put to another use just now, for owing to the continuance of the small-pox epidemic in London the authorities have deemed it wise to "protect" the young men employed in the Royal Gardens. The first company were vaccinated on Tuesday last. We wish all at Kew a Happy Christmas.

DEAN HOLE'S BIRTHDAY.—An interesting ceremony took place in the Denery, Rochester, on Saturday afternoon, when Dean HOLE, who has just celebrated his eighty-second birthday, was presented with the freedom of the Worshipful Company of Tin-plate Workers, of which he is the honorary chaplain, and an engrossed certificate. The presentation was made by a deputation of the Company in accordance with a resolution of the court, and the necessary formalities of taking the oath and signing the register were duly carried out by Dean HOLE.

M. ALFRED BLEU.—The *Revue Horticole* announces the death of this distinguished horticulturist. He began life as a druggist, but soon turned his attention to hybridisa-

tion, especially in the genus *Caladium*. The cross-fertilisation of Orchids followed, and his connection with horticulture was more intimate when he became General Secretary of the National Horticultural Society of France. Failing health prevented him of late years from taking an active part, unless on special occasions, but he contributed to the *Proceedings of the Hybridisation Conference*. M. BLEU was in his sixty-seventh year.

PUBLICATIONS RECEIVED.—*The Woodlands orchids*, by Fred. Boyle, Macmillan & Co.—*1898-1901*, by J. H. Fabre (Macmillan)—*My garden in the Country in the British Isles*, by Robert Newstead, vol. 1. (Ray Society).

ORNAMENTAL GOURDS AND CUCURBITS.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE accompanying view in the Botanic Garden, Cambridge, was prepared from a photograph taken one day last summer. It represents a bed planted with members of the natural order Cucurbitaceæ, and was situated in "the herbaceous ground." Cultivated in a group like this, these plants, when in fruit, are highly effective, and probably there is no better plan for making the most of a display than that depicted. The fruits are attractive to visitors, and they bring many visitors from the adjoining walks to make a closer inspection. They can be compared only to an arrangement of Chinese lanterns, when seen against the rising or declining sun, after the leaves have more or less faded, and permit every one to be seen. We can further at that time recall a rather practical allusion, made, I think, some years ago, in Messrs. Barr's catalogue, to the effect that anyone having a superfluity of gold might get it modelled into the various handsome forms assumed by these great fruits. Nay, we wish that we had enough for the purpose! This bed includes every year some twenty-eight distinct forms, which belong either to *Cucurbita Pepo* and *C. maxima*, and besides, to several distinct species. We have the Turk's Cap or Turban Gourd, the Valencia Squash, the Ohio Squash, the small Chinese Turban Gourd, the Canada Crook-neck Gourd, the Orange Gourd, the yellow-striped Honey Flat Gourd, the Pear-shaped Gourd, warted kinds of various shapes, and others which are not easily referred to names. Many kinds are illustrated in Vilmorin's *Vegetable Garden*, but here we do not take so much trouble in preserving named kinds as in selecting the best fruits. No doubt many cross together, and sometimes the seeds sown by names are disappointing in the fruit they produce. It would take too much time to fertilise carefully for the purpose of obtaining true seed; and, for the same reason, nothing is done, except in one case, to produce fruit by artificial crossing. Among the species we may mention *Thalictanthe dubia* (the exception above referred to), which every year is a fine feature on one of the walls, as well as usually in this bed. It is a deciduous hardy perennial, and one sex only was cultivated in this country, I believe, until I took the trouble to obtain the other. The fruits are brilliant red in colour, and hang a long time. Others are *Cucurbita ficifolia*, which has an immense green fruit mottled with white, and comes perfectly true from seed without assistance; *Cucumis nuyrocarpus* (*C. grossularioides*), the Gooseberry Gourd, a charming plant with hosts of Gooseberry-like fruits; *Cyclanthera explosens*, which bursts open in two longitudinal divisions, exposing the seeds on one side; *Echallium elaterrum*, the squinting Cucumber, always interesting to those who were not perhaps curious before;

the prickly *Cucumis dipsaces*, and *Bryonia dioica* and *B. alba*.

Bottle-gourds (*Lagenaria*) have been tried, and they do succeed to some extent when the summer is hot, but these are much finer in the tropical aquarium, where also there is a good display of select Cucurbitaceæ during June and July. It must now be said that the original of this illustration was not a perfect success. An attempt was made to include the entire group, and consequently the smaller kinds can probably not be distinguished.

The cultivation pursued may be of some interest; it depends largely upon good feeding and plenty of water. Upon this bed all the rubbish of neighbouring beds is burned after the Cucurbits are over; and though some of the ashes are removed, there remains nevertheless a good supply of potash, which, however, I do not find as indicated in large quantities in the plants, by the authorities.

Nitrogen is required in good measure, and this is supplied by liberal allowances of stable-manure, chiefly in the form of a mulch. In the future, I intend to try superphosphate, because, as shown by analysis of similar plants, it may be valuable. The plants are raised on a hot-bed, the sowing so calculated that strong plants are ready for planting-out as soon as danger of frost is over. They must receive no check at any time. From the time of planting-out, watering is carefully attended to, and during hot weather liberal supplies of water are given.

It will be seen that the bine is trained on poles some 10 feet or more out of the ground; cross poles are then added as may be necessary. A fine plant not cultivated on this bed is *Cucumis perennis*; it has large, silvery, rough leaves, and is grown on one side of the Palm-house in one of the spaces between it and another house. Here it is quite hardy, though tender in the open. In conclusion, the idea may be ventured that these Gourds might be grown very effectively if planted in holes so arranged as to form a pergola. *R. Irwin Lynch.*

FLORAL DECORATION.

Few social arts have made more rapid strides towards high class, nor more diversified pleasurable home enjoyment, than flower-decoration. We have wreaths, "elegancies," and posies for all times and seasons, from grave to gay. Rejoicings, feasting, bridal bouquets, and, alas! burying. It is an inborn art is the grouping, blending, and arranging of flowers for harmony of colour or tangled beauty; there is a feeling and poetry in it that cannot be taught.

How changed all is from that of half a century ago, when people brought a flat "nosegay" from the country, mostly tied on a stick or wooden support in formal fashion, or a bunch of odorous blossom from the cottage-garden, in the centre of which a crimson Peony held sway among the garden Primroses, Polyanthus, and Bluebells, sometimes adorned with Fennel or, later, Asparagus, for a little "greenery."

Then came the time of table-decoration, and well I remember on many an occasion acting as one of the judges of these at the Crystal Palace; and when the Emperor of Russia visited the wondrous building, Miss Hassard and myself decorated the Royal box and ante-room. Then came the odd idea of actually cutting holes in the dining-tables to let through a pot with a growing Palm, or some minor shrub in flower. Judging with the late Mr. Thomson (who invented the plan) at the Crystal Palace, I refused a prize to such "table-decoration" (?). The controversy grew warm, and finally was referred to the

manager, Mr. Isaac Wilkinson, who sided with me; whereupon Mr. Thomson declined further office. That was the last "cut-table" floral arrangement shown at the Crystal Palace for hours.

About this time, also, Mrs. Seal, of Sevenoaks, Kent, adopted a new, light, and less crowded arrangement, mellowing down into tasteful elegance what was previously merely a small forest of shrubs and flowers, and of such height and denseness that many of the dining guests were totally unconscious of how many besides themselves were present. To remedy this, the decorations themselves were not unfrequently in a way among "the removes."

Now what an adjunct to social luxury has floral beauty become! What a craving there is for flowers—cut flowers! What a business it now is, that of growing flowers, beautiful and perfect, for "cutting!" It saddens one to see acres of blossom waving, dipping, and rising to the spring or summer breeze, and the spring or summer sunlight glinting, and flashing their colours, and to know that they, these floral gems, like their higher-born kindred of "under glass," live but for—cutting. As much as they from the humble wayside, such as the Primrose, the sheltered Violet, and the fluebell, the world-loved Rose, even the costly Orchid, are now often grown simply and only "for cutting." The very catalogues from our floral nurseries tell of natural beauties—rare, fine, pure, soft in colour, or bright, pink, blue, or some tender tint, sweetly scented, but beyond all, they are—"good for cutting." To me, it is painful reading. It is a small way of looking at Nature's charms, but commercially, now "it is great." Made up into posies, wired, grouped, dished and vased in "taking" harmony or contrast of colour with the true floral artist's broad touch, they should arrest the eye and entrance the senses, but "do they?" How many that dine with such decorations about them give heed, thought, or observation to aught of these, or select even a single blossom as a thing of singular form, or exquisite shape, scent, and colouring, or any bud or leaf. To "the company" they are what they have come to be, simply decorations; and one reads next day of the gorgeous way in which the rooms were clad with pot and shrub, and the table was quite a sight with flowers of rare and dazzling beauty.

"Full many a flower is born to blush unseen,

And waste its sweetness on the desert air."

But here it is not so—the waste is not of the desert, but occurs in the midst of wealth and plenty. The chatter of voices, the clatter of plates, knives and forks; a sweet floral oasis, surrounded by admirers (?), and yet scarcely admired. Perhaps one will say to the next, "What a lovely Rose, is it not?" Then the reply is, "Oh! delicious. But as I was saying, you know, she wore such a lovely, &c."

There should be more consideration accorded to room or table decoration than is generally given. One is the colour or papering of the walls, and as they would be in the background. Certain flowers are the best for some and the worst for others, and yet apart perhaps in treatment, form, and colour, they are simply lovely. The walls of my own dining-room are clothed with Japanese paper, full and rich in design. In this, Roses seem out of place, and do not decorate; while Asters, Chrysanthemums, and Peonies, leave little to be desired. But perhaps for the most quaint, brilliant, gay, yet still not too obtrusive, is the Nasturtium (*Tropaeolum*). Foliage and flower both are so pure in tone, and each so fitted for the other, that for such purpose few, if any, other flowers excel them.

Then again it may be said that the Japanese art and the Chrysanthemum are one; their highest art is the skillful adaptation of nature more or less for what is needed, and is so grouped or arranged, or not arranged, that the eye not only sees, but with the senses either imagines or longs for more. Not many of our show Roses are decorative, in the sense that a Briar is; and in most rooms to me, though in this I may be wrong, the Rose seems scarcely to hold its own, though the breath of Roses is sweet. If the floral centre of the dining-table is too gorgeous, and crowded with heaped up flowers of amazing brilliancy, then the guests suffer by comparison, and cheeks of softest hue, and skins of purest tints, grow pale and deaden; the freshness is lost and overwhelmed by the richer, stronger tints by contrast. The true floral decorator knows this, and avoids the strife for mastery. The room, the furniture, the table, and all its art, should be like a vase which is not perfect until it is filled with other beauty in form above it. So the room and the table are not complete nor in one harmonious whole until the guests are seated, and until then it is like (or should be) a picture without a foreground. You must add the company to perfect the effect. Even this could be better managed did one but know what "dining robes" would be worn; but with or without this knowledge the table itself must not be over-dressed, as unfortunately it too often is, for though art and invention have worked together, the forms and colouring is too strong for the lesser gay surroundings.

There is also another, and by no means minor, consideration that is far too often overlooked, which is, the use of scented, peculiar, and strong-scented flowers, for many of these will not unfrequently seriously affect, not only the enjoyment, but the health of some of the guests. The Stephanotis, the Hyacinth, the Magnolia, and even the beautiful Lilac, have a loaded perfume that is too heavy and strong with some for long endurance, and they of delicate, nervous temperament too often suffer from unintentional neglect of, and care in, the selection, though beautiful, of any of the above as material for composition of such floral decoration as this for the table, when the guests are seated in close proximity, and thus, as it were, breathe "the breath of flowers."

These are but a few hints, thoughts, and ideas, which of course might be enlarged to an indefinite degree, if we considered what colours and forms make the best "combinations," what flowers and foliage should be used, and how they should be grouped; but in these days there are so many who not only know how, but can, and do, with delicate touch and handling, render something beautiful for the eye to dwell on, that it would be presumptuous on my part to tender any opinion beyond the commonplace ones already respectfully offered for guidance in a small way to the uninitiated and inexperienced. *Harrison Weir, Appledore, Kent.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

As soon as the blooms are past, preparation should be made for raising plants for the following year. Good cuttings are important, as without them the best foundation for success is lacking. A good cutting must not be too succulent; it should be stout, about 3 inches long; and the worst cutting is that one which has bloom-buds in the axils of the leaves, and cuttings of this sort continually form flower-

buds at a season when vigorous growth is needed to establish the plants.

The plants having done flowering, those varieties which produce plenty of shoots should be cut down to within a few inches of the soil; and shy-growing, new, or scarce varieties not lower than 2 feet above the soil. Although cuttings from plants of this height are not the best, being apt to flower prematurely, and should on that account be avoided, they must be taken when a variety is scarce or better cuttings unobtainable. Place the stools in greenhouse temperature, and near to the glass. If shoots of any variety are plentiful, and if they would suffer by being left on the stool till the time has arrived for taking them, remove the weaker so as to afford space to the remainder. Not much water should be applied at the root, the plant having a tendency at this season to pale with the chlorophyll in the leaves, and pale coloured cuttings are less robust, and make roots less readily than those of a normal tint.

The right time to strike cuttings of any variety has an important influence on the plants. That which is required in the Chrysanthemum is a period of steady growth under cool conditions, and the shoots will thus get well matured, and afford the best blooms, other conditions being equal. Those cuttings which are struck in February and March on bottom-heat and pushed on sharply in order to make up for time lost in December and January, never make such good plants, or such excellent blooms, the time being too brief for their proper development. The shoots of plants struck late never ripen perfectly, a disadvantage from which northern growers suffer. December is the best month in which to put in the cuttings. If intended for forming bushes, or furnishing small decorative blooms, the cuttings may be taken at any time from the beginning to the end of the month of January.

THE SELECTION OF VARIETIES.

Now that many new varieties are introduced yearly, persons who may be desirous of growing only the best for home decoration find it very necessary to weed out less fine varieties, and buy the new ones that are improvements upon existing varieties. Experienced cultivators will not require any advice in this matter, although beginners are sure to need it. I give below a list of what I term a representative selection in the various sections, commencing with the Japanese.

White Flowered.—Madame Carnot, Mrs. J. Lewis, Florence Molyneux, Miss Elsie Foulton, Madame Heneage, Madame R. Cadbury, Nellie Pockett, Mrs. H. Weeks.

Yellow.—Mrs. Mease, G. J. Warren, Mrs. Greenfield, Bessie Godfrey, Mrs. T. W. Pockett, Ethel Fitzroy, Mrs. Thirkell, Le Grand Dragon, J. R. Ipton, Mons. Louis Rémy, Scottish Chief, Kimberley, Edith Labor.

Bronze or Bronze-shaded.—Donald McLeod, Queen Alexandra, Mrs. G. J. Thornycroft, Charles Davis, General Buller, Matthew Smith, Lady Ridgway, Sensation, Lord Ludlow, Lord Salisbury, M. Chenon de Leche, Mrs. J. W. Barks, Sir Herbert Kitchener.

Crimson.—Edwin Molyneux, Henry Weeks, Godfrey's Masterpiece, Pride, and Triumph; Violet Lady Beaumont, and Henry Baines.

Other varieties possessing merit, which ought to be included, and which require special colour description, are the following:—W. R. Church, rich rosy-amaranth, or wine-red; Mrs. D. Darby, purple-claret; Miss E. Douglas, rosy-mauve; Mrs. G. Mileham, Geo. Carpenter, rosy-amaranth; Henry Stowe, bluish

pink, with deeper lines; Lily Mountford, creamy-white, flushed rose; Mrs. Coombes, rosy-mauve; Mrs. Barkley, rosy-pink; Calvat's '99, blush-white; Charles Longley, rosy-purple; Lady Hanham, golden-cerise; Madame G. Bruant, bright rose; Mons. Chénon de Leché, rosy-buff, shaded yellow; Pride of Madford, crimson-cerise; T. Carrington, carmine-rose; Australia, rosy-amaranth. *E. Molyneux.*

THE FERNERY.

MICROLEPIA HIRTA CRISTATA.

This beautiful Fern makes a large specimen, but it is not always that space can be given to pot and grow it on to its fullest size, but it is equally pretty in a small state. When properly treated it makes a very graceful plant in a 5 or 6-inch pot. It naturally makes a number of crowns, and the fronds get too dense; but if divided up to single crowns they form more symmetrical plants, and the individual fronds develop to a larger size. Potted firmly in a compost consisting chiefly of good loam, and grown where they are well exposed to the light, they make fronds of better substance, and of a bright, fresh green. There are few Ferns that are so much improved by good culture. When grown under heavy shading, and treated too liberally, they make large, coarse fronds, which are very soft, and of little use for decorations. Although a stove Fern, it will do fairly well in an intermediate temperature; and after the plants have attained to a useful size, they may be gradually hardened off, and may be used for the conservatory or house-decoration. *A. Hemslay.*

THE MANDRAKE.

"We can only refer to the figures of one plant, the celebrated *Atropa mandragora*, or Mandrake, of which so many fables have been told. A comparison of the representations of this plant at different periods, shows the gradual development and embellishment of the legend. The legend of the mandragora, a formidable plant which caused the death of whoever pulled it up, so that a dog was employed in this fatal task, as told by Josephus and others, is well known. We find here, however, from a MS. of the ninth century, a fuller account than we have met with elsewhere, which it may be of interest to translate:—

"Mandragora is a plant which the poets call *anthropomeres* sic, since it has a root shaped like a man. It is given in wine to those who wish to undergo a surgical operation safely, as when stupefied by it they feel no pain. When you come to it you will recognise it, because it shines at night like a lamp. When you see its head you must cut round it with a knife, lest it should escape. For such is its virtue, that on the approach of an impure man it quickly flees before him. Therefore you dig round it with a knife, which must not touch the plant, and carefully remove the earth with an ivory spade. And when you see the hand and foot of the herb, tie round it a new cord, and fasten the cord to the neck of a dog which has been kept fasting, and a little way off place a piece of bread so that the dog (trying to seize the bread) may pull up the herb. But if you do not wish to kill the dog, since the herb has such a divine power that it kills in an instant whoever pulls it up, proceed as follows. Make a snare of a long rod, and tie the cord which is fastened to

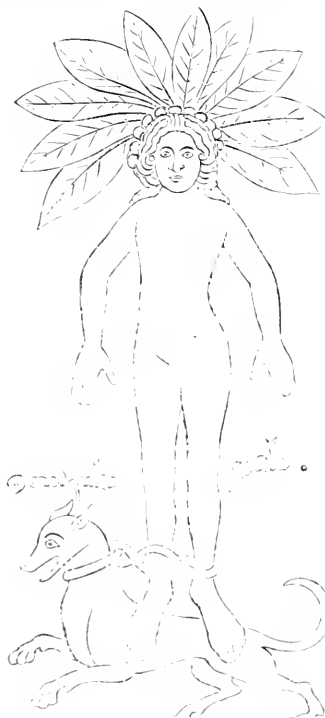


FIG. 135. THE MANDRAKE (HATA VARIETY).

the herb to the top of the rod, and bend it down, so that when the rod springs up by its own force it will pull up the herb mandragora."

"This merciful substitute for the dog we have not found mentioned elsewhere. All the pictures of the Mandrake accordingly show the dog and the cord; sometimes a



FIG. 136. THE MANDRAKE (DE WOLF VARIETY).

spectator, stopping his ears, lest (according to another part of the story) he should hear the shriek uttered by the herb when pulled up, which it was death to hear. In some, presumably the older figures, the herb is merely a forked tap-root with arms, the extremities ending in fibres, and surmounted by a tuft of leaves. In later figures the tuft is replaced by a well-formed human head, and the fibres by distinct fingers and toes."

HOME CORRESPONDENCE.

REMINISCENCES.—I have had my attention drawn to an enquiry by "Ancient" in the *Gardeners' Chronicle* for October 12, so that I have stated a few names around my native place which may interest your correspondent:—About 120 to 130 years ago, the predecessors of Messrs. Backhouse & Son founded a nursery at Darlington on 7 acres of land belonging to Mr. Backhouse, banker, Darlington. Two men were all one autumn putting in cuttings. They then left and went to York. My father, John Spence, then rented these 7 acres from Mr. Backhouse, the banker. Something like sixty years ago, Mr. Joseph Pease, the first Quaker M.P., the present Sir Joseph Pease, and others bought it from Mr. Backhouse, the banker, to add to his already beautiful park. Now it is being sold for building villa residences.

Messrs. Cormack, Son, & Oliver, nurserymen and seedsmen, New Cross, and Jacob Wrench, seedsman, London, used to travel from London to Edinburgh in a gig. At that time the travellers only called on one man in each town. Jacob Wrench's traveller would say, if you want our seeds you must get them from John Spence, and it was an open house at the King's Head for the night. Mr. Robert Tibbald, of Ayscombe and Bishop Auckland, was the only nurseryman of any note at this time. I was in Messrs. Cormack, Son, & Oliver's nursery in 1842, and helped to decorate the Royal Naval School, New Cross, when Prince Albert and the Duke of Wellington opened it; also when Louis Philippe left France for a place of safety. I joined the Queen's Bays in Ireland, but after twelve months my people found me out, by writing to the Horse Guards, and bought me out. In 1845 I went to America, and got into the war in Mexico from 1845 to 1847. My eldest brother started from Liverpool in 1847 for New Orleans to look for me, and was drowned in the Mississippi river before reaching New Orleans. I did not know of this until I returned home in November, 1847. I went back to America, and was amongst the slaves as an overseer, or slave-driver, yet I never saw one whipped or badly used. I have, however, seen white men whipped, and branded on the hips with hot irons. *Cute Tom's Cabin* is half of it fanciful, the other half of it rubbish. I came home in 1860 to take up this business. I was married in Washington in 1850, and have sold plants to the White House several times. I collected a fine lot of Cactus in Mexico, and sent them in barrels to an auctioneer in New Orleans to be sold, but it proved a bad speculation, for I got no returns. I was delighted to go out scouting, with a good Mexican mustang that could jump from rock to rock like a goat, and a few good fellows, without too much whisky in the canteens by our sides. Then I would come across those beautiful Cacti. In the case of some of the large Turks' Heads, the spines were so strong that they made our horses fairly cry out when they stepped on the top of one as large as the round of a farm-barrel. Eighty-seven of us went out from New Orleans, and twenty-seven old hands returned in 1847. We were a motley lot. Three were killed by their own comrades, eleven were killed scouting, the rest died from yellow fever. *B. Spence.*

THE JAPANESE LARCH.—It is altogether a mistake to describe this as a slower grower than *Larix europæa*. As one-year seedlings they are hardly so large as those of *Larix europæa*, but after that time they beat it altogether. It planted under the same con-

* From a review in *Nature*, Nov. 11, 1901, of "Magistrato Salsomariano mondino editi. Catalogo ragionato della Esposizione di Storia della Medicina aperta in Torino nel 1897." By Piero Giacosa.

dition they make about one-third more growth. I am posting you a specimen of a three-year-old plant to show you the growth it made last year. A customer in the west of Scotland to whom we supplied plants of *Leptolepis*, informed us that the second year after being planted they had put on growths of almost 3 feet each. It is a much handsomer tree than the European variety, especially in autumn, when it takes on a beautiful golden colour. There is not much difference as regards the time of starting into growth in spring, but it ripens at least a fortnight or three weeks earlier in autumn. I have been watching this variety closely for a good many years past, and have never seen any trace of disease in it. *W. H. Massie.*

TAR VERSUS PAINT.—Have any readers of the *Gardeners' Chronicle* given gas-tar a trial as a substitute for paint for the outside wood-work of vineries or plant-houses? Some perhaps would object to the colour if to nothing else as being offensive to the eye. This might be so in private gardens, but in nurseries and market gardens it would not, I think, be so regarded. I have recently inspected the market nursery of Mr. B. Tew at Whetstone, where all the houses are coated with gas-tar, and Mr. Tew, who is, so far as I know, the first to adopt this method, is well satisfied with it. In the first place the cost is small compared with ordinary paint, and so far as the trials have gone, the tar appears to be more lasting. Added to this, Mr. Tew remarked that in some large and rather high houses there were always squares of glass dislodged with every rough wind when ordinary paint was used, but that not one had been disturbed by that cause since gas-tar had been used. No top putty is employed, but the squares are simply tacked in—a system of glazing that was first adopted by Mr. Tew in this nursery. The tar is, of course, only used for the outsides of the houses. *C. H.*

THE SUTTON CHRISTMAS RHUBARB.—When it was stated last year that Messrs. Sutton & Sons, Reading, had a stock of a Rhubarb which naturally started into growth in October, quite reversing the usual order of things amongst Rhubarbs, naturally some scepticism was aroused. The firm, however, sent a root to Chiswick for trial, and Mr. Wright informed the Fruit Committee in relation to it on the 12th that he had hoped it would have been in condition for that body to see then. The root seemed to have its usual period of rest during the summer, when all other varieties were in full growth, and broke into growth early in October. When the unusually sharp frosts of November came, the stems were from 15 to 18 inches in height. It was found necessary to allow of full exposure to the weather to see how far the stems were hardy or otherwise. Possibly, in a sheltered position, mild frosts would have done little harm, but the November frosts were severe, and the stems were cut down. That, of course was, with a knowledge of the tender character of all Rhubarbs, to be expected. But that does not at all militate against the usefulness or value of this winter Rhubarb, inasmuch as it would be but needful to invert over the plants early in November headless flour-barrels, with some litter stacked round them to exclude sharp frosts, to have Rhubarb stems of quite the ordinary type otherwise, through the winter. Where big stocks of roots were worked up it would be so easy just as growth commenced to block a quantity into a cool Peach-house or vinery, from which frost was excluded, and there, without any forcing, an abundance of stems could be secured. This remarkable Rhubarb should have a useful future. *A. D.*

MONTBRÉAS.—To the closing remarks of Mr. C. Wolley Dod on this subject at p. 289 that "the best situations and soils in each garden must be found by experience," I would also add flowering, non-flowering, and hardiness, because experience has taught me that all these are as variable as localities. Here,

at Hampton Hill, an amateur has some fine clumps of *M. crocosiiflora* that were planted several years ago, and that reach 3½ feet high and flower abundantly. Nearly two years since I suggested to the owner that the clumps would be improved by being lifted and separated, but was met by the remark: "Why, they grow all right and flower well; and on the principal of letting well alone, I should leave them alone unless you suggest that they are likely to suffer in the near future." As to the strength of the growths and to the flowering, there was ample evidence. But I do know that in many gardens it is the safer practice to lift the roots together with the leaves just as they stand, doing this as early as possible, about the middle of the month of October, the corns being put 6 inches deep; most varieties will be found quite hardy in an average winter. To ensure their safety the lifting should take place as early as it would be the case were the corns intended for trade purposes. The great drawback referred to by Mr. Dod that when "first bought the corns will not start into growth," is doubtless the outcome of very late lifting and harvesting, and the new shoots already having started are either purposely removed or accidentally broken off. To ensure a good growth from newly-lifted or newly-bought corns, the lifting should be done prior to the growth having started from the corns, and this will be early or late in proportion to the absence or presence of rain following a long, dry spell of summer. Even if the corns are replanted in the border forthwith, the lifting will cause a check sufficient to retard these young breaks for the time being, for the large death-rate where this occurs is due directly to the almost evergreen nature of the plant. Like *Gladiolus Colvillei*, the new growth, pushes through the soil quite early; these getting frozen with the decay thus occasioned, frequently descend to the corn, and the frost, if of long continuance or very severe, finishes the work of destruction. The thing to do then obviously is to check the desire of the corn to emit these growths by checking or cutting off the supplies from the roots for the time being. Even though the plants be not again committed to the border at once, there is this gained: that in any subsequent removal the new shoots would be shorter. Mr. Dod says, "it is essential to keep them moist," and I agree with this in the event of some 2 or 3 inches of new growth having emerged from the corn. It is by no means essential if no such growth has been made. In April of this year I planted many dried corns which had been dried off after the manner of *Gladiolus Gandavensis* hybrids, and kept dry for months, yet all these have flowered profusely and made capital growth. These included such as *Drap d'Or*, *Bonquet Parfait* and the fine new Germania that produces a tone of flame colour that is very striking. As three small late-planted and very dry corns produced five or six handsome branched spikes 2½ feet high, I think I am entitled to lay some stress on the important factors in harvesting such plants. When planting these largely, and often when the setting season is passed, I never had any experience of "non-starting and non-flowering," and such corns must have been many months in a dry state. I have, however, in numerous instances, recommended the planting of these dry corns for flowering, and they have not disappointed. It is, however, another matter if the plants are late lifted in the evergreen state. Anyone receiving plants in the green condition should most decidedly pot them, as Mr. Dod directs, for to dry off such plants is merely to court certain failure. *E. H. Jenkins, Hampton Hill.*

FINE SPECIMENS OF THE HORSE-CHESTNUT.—I note in the *Gardeners' Chronicle* of the 14th inst. a description of some magnificent Horse Chestnut-trees in Lincolnshire. When I was living at Walworth Castle, about 5 miles from Darlington, a few years ago, I frequently admired two Horse Chestnut-trees there which must resemble those mentioned in your paper. The huge branches were supported by props,

but many of them had touched the ground, rooted again, and sent out other enormous branches, and some of these have become separated altogether from the parent stems. The circumference of each of these trees was about 18 feet, and the heads covered a very great area. I believe they were described many years ago in Surtees' *History of Durham*, and tradition says they were planted by James I. *W. R. I. H.*

VEITCH'S CLIMBING FRENCH BEANS FOR FORCING.—This may not be exactly a new vegetable or a new practice to some readers, but I think a very good acquisition in places where Beans are forced throughout the winter months. I planted at the end of September some two dozen plants of this valuable Bean out of 3-inch pots in a Melon-house, to follow a crop of Melons, without anything being added to the soil, but simply forking it over. The line was trained up the wires for a distance of 1 foot. I commenced picking pods in the middle of the month of November, on an average every third day. The pods measured 6 to 8 inches in length, and to-day, Dec. 14, I picked upwards of 1½ lb. of splendid tender pods. An advantage gained by this method is that the plants take up very little space, and the foliage is near the glass, which enables them to set well. They are kept very clean by the use of the syringe, and podding is aided by a little manure-water. The house resembles a house of immature Cucumbers, and the pods are much larger than those of ordinary French Beans at this season. *Fredk. Smith, Gliffes Gardens, Crickehowell.*

AZALEA MOLLIS AND RHODODENDRONS FOR NORTHERN SMOKY TOWNS.—Sending your replies to your correspondent, "Experientia docet," I thought it might be of some assistance to him if I gave him my experience in this district, as from his *non-de-plume* he evidently thinks that experience is the best teacher. Three years ago I planted a number of Rhododendrons, and as the soil was only about 9 inches in depth, and underneath there was a bed of solid clay, I took out the clay to a depth of about 3 feet, placed in the bottom of the bed a quantity of rough stones, and filled in with peat and a small quantity of sand. The varieties planted were named hybrids, and so far they have grown and flowered remarkably well, withstanding the drought of last summer without apparently any ill effects. I also planted a number of *Azalea mollis* and *A. pontica*, also some Rhododendron ponticum; and as regards the preparations for these, I merely took away some of the clay and replaced it with good loam and some material to secure porosity, and had the beds well trenched, the fresh material incorporated with the staple. At the time of planting, I put some leaf-soil with each plant. *Spiraea arguta* is a shrub that should be planted in every garden, thriving, as it will, almost anywhere; and in April, when it is covered with myriads of small white flowers, it is a beautiful object. I think that the chief cause of failure in smoky places lies not so much in the locality as in not having the land well drained and worked, and by not making it more porous where it is stiff and retentive. Besides the plants above mentioned, some of the more hardy conifers do very well, viz., *Cupressus Lawsoniana*, *C. crecta* Fraseri, *C. Nootkatensis*, and many of the Thuyas. All of the above are planted within a mile of many factory chimneys, and are thriving. *F. W. C. Preston.*

RUST ON CHRYSANTHEMUMS.—Referring to the note by "W. S." on this topic, perhaps some observations on a trial that came under my notice this season of plants growing side by side, fifty of which had no manure whatever, and escaped without a trace of the pest on any one of them. The others, which were highly manured chiefly with artificial manure, were almost denuded of foliage by the time that the blooms expanded. It would appear from this test that the use of chemical manure is accountable for the presence of the disease

in many collections. Will some large grower of the plants give a more extended trial, and report thereon in these pages? *H. Culloch, Denton, Grantham.*

RYTON MUSCAT GRAPE.—Some time ago, when at Dalkeith, I remarked a vinery planted with this variety. They were planted by the late Mr. M. Dunn. The variety does not seem to be much known, and I give the following description of it, taken from Messrs. Rivers & Son's catalogue:—"Berries large, oval, equal in size. It was raised many years ago at Ryton, near Newcastle-on-Tyne." Judging from what I saw of it at Dalkeith, it may become a rival to the old Muscat of Alexandria. Mr. Whylock thinks highly of it. *William Carmichael, 11, Pitt St., Edinburgh.*

ORCHIDS IN LEAF-MOULD.—Surely your correspondent (in this week's Calendar of Work) must be guilty of a little discrepancy. He first alludes to the very great caution required in applying water to plants potted in this compost, owing to the retention of moisture for too long a period. Then he states in conclusion, that an excessive amount of water is necessary to plants so potted, otherwise the prejudicial result (premature growth) would be avoided. Now to the anxious amateur is not this rather perplexing? he will be in a quandary deciding between the necessary excessive moisture, and the requisite "great caution" in the application of same. Owing to the absorbent nature of this compost, had he not better desist from affording water during our dull season, letting a very little spraying suffice for the necessary humidity? My object in remarking on this subject is not to pose as a scientist, or to give advice, but rather to evoke discussion on what is admittedly an important question, should this comparatively new rooting medium for Orchids become general. The continental growers have used this compost for some years with good results. True, the lack of sunshine in our winters (as your respected correspondent remarks) is somewhat of a deterrent to its general use; but cannot we in a measure overcome that difficulty? In the past so much has been accomplished in Orchid culture, seemingly overwhelming obstacles removed by devoted and untiring attention to details, often by no means under congenial conditions, that surely this problem need not make us despair. If not so successful as our continental friends, owing to our climate, we can in a measure make amends for the dull season by affording increased light and air during the summer, which will enable us to build up a sturdier growth which could withstand the conditions of a dull and waterless season. Are we not often too zealous in the use of the sun-blinds? In France this compost-question is regarded as being of sufficient importance for the French Horticultural Society to appoint this year a Commission to enquire into the possibilities and adaptation of leaf-mould for general use in the cultivation of Orchids. Rather a startling announcement was made by Messrs. Duval, of Versailles, whose establishment was visited, who remarked that water was never applied to their Orchids in the usual manner, syringing and damping between the pots being found to be sufficient, and never at any time was much moisture required. M. Delanghe, of Brussels, also considers the application of water such an important matter, that he always carries it out himself. Before adopting leaf-mould generally, a few varying conditions should be considered, in which we differ from the continental conditions. First and most important is the temperature obtained, assuming only and not from personal experience, the plants will require less artificial heat, in itself a matter that has a great influence on the moisture in the compost and about the plant; secondly, plants that are surfaced with sphagnum-moss, moisture is here necessary in order to keep the moss alive. Messrs. Duval consider sphagnum-moss a superfluous, plants growing well and rooting freely without it. Plant-stages capable of holding water are of two-

fold value, seeing that they give off humidity, and keep the direct pipe-heat away from the plants above them. Thirdly, have we the same sort of leaf-mould in this country that the continental growers use, and have we a natural blend of peat, leaf-mould, loam, sand, or must we import leaf-mould? In that case I fear the cost will deter its general use; yet cheapness is held to be a great advantage that it has as compared with peat. We may yet find the necessary material in some of our own peat districts, as good as the Belgian. Anent annual repotting, with judicious care this will not be so necessary, as we hear of pots being used large enough to suffice for two or three years. *Crispium.*

WHAT IS CARNATION?—Referring to the article on p. 105 of last week's issue, I think the short answer to this enquiry should be: Spice, or Clove. Carnation undoubtedly comes from Caryophyllon, Latin for "spice." If we refer to London's *Encyclopædia of Gardening*, published 1821, on p. 1041 we find enumerated the names by which the Carnation was known in several foreign countries, viz., Karnoffel, Dutch; Garmofano ortense, Italian; and Encarnacion, Spanish. All these names have a strong family likeness, have been derived from the same source, and have the same meaning—spice or clove. London, in the same work mentioned above, says the garden Carnation is supposed to have been introduced from Germany or Italy, and also that Gerarde, in 1597, received it from Poland; and no doubt, from whatever country it may have been received, it was accompanied by the name by which it was known in that country. The word being a foreign one, it was altered to suit our pronunciation; and if the original signification of the word was at first known, it soon became lost, and to supply that loss we adopted another form of word having the same meaning, Clove; so that when we speak of Clove Carnation, the original meaning is Clove Clove. There is another word formerly much more used than now, in relation to Stocks and Carnations, which has exactly the same meaning; that is Gilli, or Gilly, as Gilliflower, or Gillistock; it comes from the French word for Clove, *Girofle*. This has also been derived from Caryophyllon, probably through the Dutch, or modern Italian form. So Gilly-stock is literally Clove-stock. To suppose that Carnation was derived from the so-called colour of that name, would, I think, be placing the cart before the horse. There are a great many colours, I believe, which bear names taken from plants, animals, and things, such as violet, lilac, rose, pink, flesh, chamois, straw-colour, and the very modern strawberry and crushed-strawberry; but I am not acquainted with any instances where plants have been named after a colour, though there may be some. This is but a very short note on a big and interesting subject, and I shall be pleased to refer to it again. *H. Elliott.*

Obituary.

MAJOR HENEAGE, V.C., whose death took place suddenly on the 9th inst., planted a very rich collection of choice trees and shrubs at his residence, Compton Bassett, Calne, Wilts; and exhibited a lively interest in arboriculture. His gardener, Mr. W. A. Cook, is known to many readers of the *Gardeners' Chronicle*. The deceased gentleman was seventy-one years of age.

JAMES RICHARDS.—On December 11, at 3, Elm Villas, Ealing Green, W., died, James Richards, for twenty-seven years Honorary Secretary of the International Exhibition Co-operative Wine Society, and late of the Royal Albert Hall, and Royal Horticultural Society, &c., aged 66 years. Interment, South Ealing, Saturday, noon. Many of the older Fellows of the Royal Horticultural Society will remember Mr. Richards as the Assistant-Secretary of

the Society during a portion of the troublous times at South Kensington. Mr. Richards, although having no special horticultural knowledge, was an excellent official, and generally popular, and his transference to the Albert Hall was looked on with regret.

SOCIETIES.

ROYAL HORTICULTURAL. CHISWICK.

NOVEMBER 12.—A meeting of the Fruit and Vegetable Committee was held here on this date. *President*, Mr. Balderson, in the Chair, and Messrs. J. Wallard, G. Wythes, G. Kell, W. Bates, G. Reynolds, and A. Dean. The special object of the meeting was to test the cooking qualities of various late Potatoes. When at a preceding meeting in the autumn the numerous stocks of late varieties were listed, and selected fine croppers-cooked, it was found that many of them were not mature, hence the holding of a cooking test so late in the year. There were ten varieties presented to the Committee, all admirably boiled in their coats; and so good were five of them, that three marks were unanimously awarded to each. Samples of these it was agreed should be presented to the full Committee at the Drill Hall on the 17th, to enable Awards of Merit to be given to them, the meeting at Chiswick again failing to constitute a quorum. The following were the honoured varieties: *Pydie Wonder* (Troughton), handsome, white, round, and a heavy cropper; *Ellington's Prolific*, white, round, pink eye, a huge cropper; *Dobbie's Improved Kidney* (as name the Committee desired to be changed), a handsome white Kidney, abundant cropper; *Burnish Beauty*, round, white, a very great cropper; and *Carltonian* (Taylor), white, round, with slightly yellow flesh, also a heavy cropper. All these showed nicely flesh of special excellence. The Committee cordially agreed that it was desirable that the Council should obtain an acre or two of open ground on some more retentive soil, for the purposes of enabling more complete trials of Peas and Potatoes to be conducted than the limited area of Chiswick Garden affords. Some Celeries were to have been examined, but because it was not possible to get them planted out until other crops were off, they were too late and imperfect, to constitute a proper trial.

DECEMBER 17. The last meeting of the Committees of this Society for the present calendar year (the Society's year continues until February) was held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster. As is usual at such a meeting, there was rather a meagre display of exhibits, as not only was the previous night very cold, but it was succeeded in London by a thick fog, which lifted about noon. Orchids were naturally not numerous, but the admirable display of paintings by Miss ROYERS did much to compensate the deficiency in living specimens.

The only awards recommended by the ORCHID COMMITTEE to novelties were to a *Lycaste* and a *Cypripedium*, also a Commendation to some *Bambusa* blinds, shown by MESSRS. NIEWIARSKI & CO.

The members of the FLORAL COMMITTEE turned out well, there being a large number present. This body recommended three Awards of Merit, one to a new Begonia, and the remaining two to *Chrysanthemums*. MESSRS. CANNELL showed bright *Pelargonium* flowers. MESSRS. JAMES VERTRENT an excellent group of winter-flowering Begonias, and MESSRS. W. WELLS & CO. a group of *Chrysanthemums*, &c.

THE FRUIT AND VEGETABLE COMMITTEE, of which only eleven members were present, recommended Awards of Merit to a new Pear, a new Apple, and to five varieties of Potatoes.

At a meeting in the afternoon there was no lecture given, but upwards of forty new Fellows were elected, making a total of about 550 elected since the commencement of the year.

Floral Committee.

President: W. Marshall, Esq., Chairman, and Messrs. Chas. F. Druery, H. B. May, Geo. Nicholson, James Walker, E. Dean, G. Reulle, Jas. Hudson, Herbert J. Cuthish, C. R. Fielder, Charles Dixon, Charles Jellies, C. J. Salter, Chas. E. Pearson, Chas. E. Shew, W. P. Thomson, E. H. Jenkins, W. J. James, Harry Turner, J. W. Barr, J. F. McLeod, and R. C. Notcutt.

MESSRS. W. WELLS & CO., Earlswood Nurseries, Red Hill, Surrey, made an interesting exhibit of *Chryson*

them in a group containing plants in pots, and out flowers. All the varieties shown were decorative ones, such as Princess Victoria, white; Lettner, white Japanese, good large flower of excellent type; Mrs. C. Brown, cream-coloured; Christmas Crimson, a new late flowering variety, not unlike medium-sized blooms of Ed. Molyneux; and a pink sport from Princess Victoria. Among single-flowered varieties shown were Cibran's Terra Cotta, J. T. Angus, purple; Nora Davis, bronze-red; Sir Redvers Buller, a good, large-flowered, late variety, &c. (Silver Banksian Medal).

Mr. SWAN, Ivybridge, S. Devon, exhibited blooms of a "Chrysanthemum named Mrs. Brownfield Craig, a pink Japanese, the florets of which are deeply forked (Sik's, born fashion) at the tips, giving the blooms a curious appearance.

Messrs. JAMES VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Rd., Chelsea, made another very fine display of winter-blooming Begonias of the section obtained by crossing *B. socotrana* with tuberous-rooted varieties, and which were described fully on p. 438 of our issue for last week. The varieties shown on Tuesday were Winter Cheer, Ensing, and Julius; and the display furnished a set of one of the long tables that run along the length of the hall (Silver-Gilt Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, made a display of cut flowers of zonal Pelargoniums, having exceedingly bright colours, and possessing large size and good form. Some of the best varieties were Winston Churchill, splendid rose colour with white centre; President McKinley, a mixture of purple and scarlet; General French, scarlet; Lord Roberts, purple; Lady Sarah Wilson, white, speckled with scarlet; Duke of Norfolk (new), purple very large; Lady Roseve, flesh-pink, very delicate, a most distinct variety; Lady Laurier, pink; Capt. Holford, scarlet and purple; Lord Hopetoun, scarlet; General Buller, deep crimson; Cerise, &c. (Silver-Gilt Banksian Medal).

A. G. SANDEMAN, Esq., Presdale Gardens, Ware (gr., Mr. G. Fulford), showed plants of a good scarlet-flowered zonal Pelargonium named Mrs. Albert Sandeman.

W. SEWARD, Esq., Hanwell (gr., Mr. C. Shrimpton), showed a group of well-grown Cyclanencus, in pots. There were forty or fifty specimens, in good flower (Silver Banksian Medal).

Mr. J. WILLIAMS, Oxford Road, Ealing, showed an epergne of the rural type, silver-plated, prettily furnished with small yellow Chrysanthemum-blooms and pink-coloured Carnations, with suitable greenery. The epergne and arrangement were light, and the colours very pleasing.

J. COLMAN, Esq., Galton Park, Reigate (gr., Mr. W. P. Bond), exhibited a group of Poinsettias, with large, highly coloured bracts, which however soon showed signs of check from the cold atmosphere of the building (Silver Banksian Medal).

From Lord ANCASTER'S garden, Normanton Hall, Stamford (gr., Mr. J. Butler), came sprays of *Chimonanthes fragrans graciliflora*, and some good specimens of several choice varieties of Violets.

Messrs. GARAMAY & Co., of Bristol, showed a large single Violet, named "King of the Violets."

AWARDS OF MERIT.

Begonia Agatha.—This is a hybrid Begonia obtained from a cross between *B. socotrana* and *B. "Moonlight"*, the latter variety being itself a hybrid from *B. Dregei* and *B. Pearcei*. The parents were shown along with plants of the new variety, which in appearance is at once strikingly suggestive of the Mrs. Leopold de Rothschild form of *B. Gloire de Lorraine*. It is only a few flowers, however, that are similar, the leaves being more nearly like those of *B. socotrana*, but not pettate, a habit of the plant is more compact. The novelty is quite as floriferous as *Gloire de Lorraine*, but the flowers are produced in a dense profusion, one upon the other as it were. It is very showy, but may prove to be less graceful than the popular, easily cultivated variety named above. Shown by Messrs. JAS. VEITCH & SONS, Ltd.

Chrysanthemum Golden Princess Victoria.—This is a golden coloured sport from the well-known late-flowering variety, and will make a glorious, brightly coloured novelty for the Christmas season. Shown by Messrs. W. WELLS & Co.

Chrysanthemum May McBean.—This is an incurved Japanese variety, and the tips of the florets resembling a three-pronged fork; it has a very distinct appearance. For decorative purposes this novelty may prove welcome. From Mr. F. J. McBEAN, Green Cross, Plumpton

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), J. Colman, J. G. Fowler, de B. Crawshaw, R. Brooman White, J. Douglas, H. J. Chapman, H. A. Tracy, H. T. Pitt, A. Hislop, E. Hill, J. W. Odell, G. F. Moore, W. H. Young, W. H. White, J. W. Potter, F. A. Rehder, H. Little, H. M. Pollett, and T. W. Bond.

The sudden fall in the temperature caused some intending exhibitors to keep their plants at home. Messrs. Jas. Veitch & Sons had entered for a group of about forty distinct hybrid Laelias, Laelio-Cattleyas, &c., among which were five new ones, flowering for the first time; but with 12° Fahr. of frost, it was deemed better not to bring them out of the houses.

Captain HOLYOKE, Westonbirt, Telford (gr., Mr. A. Chapman), was awarded a Silver Flora Medal for a group of excellently well grown *Cypripediums*, the most remarkable of which were the fine *C. × Milo*, "Westonbirt variety," a model flower, of fine colour; *C. × Mrs. Taitz*, with fine broad white dorsal sepal, profusely spotted with purple; *C. × nitens*, "M. de Curté," *C. insigne citrinum*, a fine yellow variety; *C. × "Harefield Hall variety,"* still the largest and best of its class; *C. J. Sandera*, *C. J. Dorothy*, *C. J. Dorman*, *C. J. aureum*, *C. J. montanum aureum*, *C. J. Hornsmani* and other forms of *C. insigne*. Among the hybrids were *Cypripedium × Euryades*, *C. × Tityus*, *C. × Lecanum*, "Westonbirt variety," a fine and distinct flower; *C. × L. Burfordense*, *C. × L. giganteum*, &c. With them were a grand spike of *Vanda cornelia*, *Laelio-Cattleya × Iletelidensis*, and *Cattleya Walkeriana*.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed a cut spike of *Vanda Sandera* rose-lila, with the upper sepal and petals nearly white, with slight purple spotting on the inner halves of the segments; lower sepals greenish with purple veining at the base. Also *Odontoglossum crispum* Hartmanni, and *Cypripedium × Euryades* "Burford variety," very finely coloured.

The Hon. WALTER ROTHSCHILD, Tring Park, showed his unique specimen of *Mormodes badium latum*, which had previously received an Award. The type plant in the Tring Park collection is of a dark carlet-purple; the variety shown had clear yellow flowers with a singular fish-tail form of labellum. The same exhibitor sent *Laelio-Cattleya × intermedio-flava*.

H. S. LEON, Esq., Bletchley Park (gr., Mr. A. Hislop), showed the singular-looking *Cattleya × Arthuriana* (Bormaniana × *luteola*, and *Cattleya × preciosa* var. *Hislopi*), with rosy-lilac flowers, veined with purple on the lip.

F. WELLESLEY, Esq., Westfield, near Woking (gr., Mr. Gilbert), showed *Cypripedium Munnie* (? *Lecanum nitens*). The dorsal sepal was white, with a small green base, and a number of purple spots in the middle area. Petals and lip yellowish with brown markings.

Dr. B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed a spike of *Laelia anceps* *Ameisiana Theodora*, a further extension of the fine *L. a. Ameisiana* Crawshawiana, the front lobe of the lip in the present variety being broader. Sepals white, tinged with rose; petals white, shaded with rose on the outer halves, and tipped with purple; crest dark yellow; front lobe of the lip deep ruby-purple.

F. BIBBY, Esq., Hardwick Grange, near Shrewsbury, sent *Laelia anceps* "Lady Stanley Clarke," a fine flower of the grandiflora class.

Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), sent *Cypripedium × Latrobei* var. *punctatissima*, in which the petals were spotted with dark purple.

Mr. J. McBEAN, Cooksbridge, showed *Cypripedium* named "McBean's variety," a very large flower, with unusually long upper sepal, the apical part of which was white, the basal half yellowish green, with large light brown spots.

M. LINDEN, Brussels, showed plants of the yellow *Cypripedium × insigne* *Chantim Linden*, and *Oncidium varicosum* Moortbeekense, the large bright yellow lip of which had a distinct reddish-brown blotch at the base—a very showy variety.

FRED. HARDY, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. Stafford), sent cut flowers of *Sophr. Cypripedium × Geo. Hardy*, *Cypripedium insigne aureum*, *C. J. giganteum*, *C. × Lecanum giganteum*, and *C. × Lecanum rotundatum*.

Dr. E. B. CRANSTONE, Ludlow (gr., Mr. J. Godfrey), sent *Laelio-Cattleya × Cranstonia* (C. Harrisoniana × *L. tenebrosa*). Both plant and flower bore a striking resemblance to *Cattleya maxima*, although there is no doubt the percentage given is correct. Sepals and

petals white, tinged and veined with pale rose. Lip white, with dark rose veining.

H. T. PITT, Esq., Kosslyn, Stamford Hill (gr., Mr. Thurgood), showed a cut example of *Lycaste × Balthusperba*, with a very finely coloured flower.

Messrs. HATH & SONS, Cheltenham, showed *Cypripedium × Lathraianum giganteum*, *C. × Lecanum viride*, and other *Cypripediums*; also two white *Dendrobium Phalaenopsis*, with rose-coloured front to the labellums.

A very effective and interesting display of the pictures of certificated plants made by Miss ROUSSEAU, the Society's Artist, was arranged down the middle of the hall, the varieties exhibited being arranged in groups according to their parentage, and the utility of the pictures could thus be readily understood. The *Cypripediums* were represented by about sixty drawings; the *Cattleyas* and their hybrids by about one hundred; the *Laelias* and *Laelio-Cattleyas*, over one hundred; *Odontoglossums*, about seventy; and other genera in less quantity, only part of the collection being staged on this occasion. The necessity for having drawings of some of the best of the plants that are certificated before all of the certificated plants are drawn is evident, and it is intended to supply the deficiency as opportunity offers.

Messrs. C. W. NEUWERT & Co., Pinner Road, Harrow-on-the-Hill, showed their Bamboo blinds specially recommended for shading Orchid and other plant-houses, and the Committee passed a vote of commendation. The blinds, which are extremely light and strong, are made in Java, the long strips of Bamboo, of which they consist, being woven together with a strong cord of "kenoetic," the whole being light and easy to roll up, either with or without a roller. The advantage is that the necessary shade is given without light or ventilation being interfered with.

Awards.

AWARD OF MERIT.

Lycaste × Taw's Hill, from ROBERT TUNSTALL, Esq., Monkholme, Burnley (gr., Mr. Balfour).—A very pretty supposed natural hybrid imported with Lycaste skinneri, and having flowers as large as that species, but with the sepals longer and more pointed, in colour it resembles *L. × Balthusperba*, but the narrower labellum with downy margin readily distinguishes it. Sepals rose-coloured, petals white, with small rose-pink spots in the middle; lip ruby-red with white markings.

Cypripedium × Trolas (Salteri Hyacynth × *insigne* Sandera), from J. G. REEA FLOWER, Esq., Gleveland, South Woodford (gr., Mr. J. Davis). A very distinct hybrid, with a strong likeness to the fine *C. insigne* Sandera, especially in the dorsal sepal, which has the upper part pure white, as in *C. insigne* Sandera. The petals and lip were yellowish with slight brown tinge.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., chairman; and Messrs. Jos. Cheal, J. W. Bates, S. Mortimer, Alex. Dean, Geo. Kelt, J. Jacques, F. Q. Lane, Geo. Wythes, W. Poupard, and H. Markham.

Messrs. JOHN PEEB & SONS, Roupell Park Nurseries, Norwood Road, London, S.E., made an exhibit of a collection of Apples and Pears in considerable variety.

R. P. COOPER, Esq., Berkhamsted, exhibited some fourteen bunches of Grapes, including specimens of Black Alicante, good in size of bunch and colour of berries, the latter being of moderate size; and finely finished bunches of the new white variety, Lady Hunt (Silver Banksian Medal).

Messrs. FROOME & SON, High Road, East Finchley, exhibited fruits of a moderate-sized yellow-cored Apple, with little red upon one side, and sparse spotting, named Finchley Pippin; and W. H. HAYWARD, Esq., Watlingford, Bowden, Cheshire, showed fruits of Apple Watlingford Pippin, about the ordinary size of Blenheim Orange Pippin, slightly shrivelled; and another seedling Apple, bright-looking hard fruit, was shown by Mr. HARRISON, Fricland Lodge Gardens, Woodstock.

AWARDS OF MERIT.

Apple The Woodhoop.—This is the product of a cross between Peasgood's Nonsuch and Cox's Orange Pippin. The fruits are about the same size as those of the latter variety. They are highly coloured, especially on one side, the colour occasionally having the appearance of splashes. The eye is open, and set in a moderate-sized basin; stalk less than half an inch long, proceeding from an even, funnel-shaped cavity; flavour excellent of the character of Cox's Orange Pippin. Shown by Captain CAUSTAINS, Welford Park, Newbury (gr., Mr. C. Ross).

Pear General Wauchope.—A seedling variety from *Ne Plus Meuris* x *Duchesse d'Angoulême*. It is of moderate size, regular in form, excepting a thickening of the flesh near to the stalk. The stalk is about 1½ inch long, and the eye is set in a deep depression. Skin yellowish-green, with minute spotting. Flesh soft and juicy, free from grittiness; flavour rich, partaking of that of the first named parent. Apparently a good addition to late-ripening Pears. From Captain CARSTAIRS.

Potatoes.—Awards of Merit were recommended to the following varieties of Potatoes, tubers of which were shown from the Society's Gardens at Chiswick, whence they had been sent for trial.—*Arctonia*, from Mr. A. TAYLOR, Brougham, Peirith; *Dobbie's Improved Kidney*, from Messrs. DOBBIE & CO., Rothsay, *Falck Wonder*, from Mr. W. TROUGHTON, 154, Church Street, Preston; *Ellington's Proteus*, from Mr. W. ELLINGTON, Mildenhall, Suffolk, and *Kerr's B.*, from Mr. W. KERR, Dumfries, N.B.

LINNEAN.

DECEMBER 12.—Dr. W. G. RIDGEWOOD, F.L.S., exhibited nine specimens of abnormal sacra in the edible frog (*Rana esculenta*), and one in the common frog (*Rana temporaria*).

Dr. J. H. SAITER read a paper on "Protoplasmic Connections in the Lichens." The investigations detailed were undertaken at the suggestion of Prof. Arthur Meyer, of Marburg, the lichens chosen for special study being *Peltigera canina*, *Cercaria Prunastri*, *Usnea barbata*, *Cladonia furcata*, *C. rangiferina*, and *C. squamosa*. One per cent. of osmic acid was used for fixing, dilute sulphuric acid for causing swelling, and chloral hydrate for clearing. "Barris's Blue," which is identical with Hoffmann's blue in its action, was employed for staining. Observations were made by a Zeiss 1.6 homogeneous oil-immersion objective, giving a magnification of 1600 diameters, and the drawings were made by the aid of the camera lucida. Sections through the body of the Lichen, showing the cortex, gonidial layer, hyphae, and rhizoids, were displayed on the screen, and the various forms of connection of hyaline *intra* or, with the algal cells, were pointed out. The author stated, in conclusion, that the observations tended to show that a complete anatomical union exists between the several tissues of the Lichen thallus, due to the innumerable connections which may be traced between the ultimate histological units, the segments of the hyphae. Many physiological problems are simplified, and a new conception is obtained, by our ability to recognise the essential unity of the living matter throughout the organism.

Mr. F. CHAPMAN, A.L.S., read a paper on the "Fungi" which collected round the Fumant Aboli, from shallow and moderately deep water, with notes on new species from the sands of the Reel Slope."

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

DECEMBER 12.—The fortnightly meeting of this Association was held at St. John's Rooms, on the above date, Mr. Hancock presiding over a moderate attendance. The essay for the evening was on "Stove Plants," by Mr. J. T. Curtis, gardener to Alderman W. Howell Davis, J.P. It was in every respect a practical one, and one which reflects great credit on the essayist and on the Association. Mr. Curtis divided his subject into three parts: stove chambers, flowering, and foliage plants, dealing with details in a clear and masterly way. He gave an excellent selection of all three varieties of stove plants, their mode of culture and treatment, their usefulness for decorative purposes, and the insects which infest them, and the best means of prevention and eradication. At the outset he remarked he was giving his own practical experience, which showed he was a successful cultivator.

Where the gardener has no proper stove house, Mr. Curtis gave directions as to the arrangement of the different varieties, so as not to overcrowd, and yet to be able to grow them with success. The compost for each plant was carefully described, the lecturer imparting his knowledge to his audience in a clear way, from which they were able to obtain many valuable hints. The cultivation of *Codiaeum*, *Cardenas*, *Panederiana*, and *Eucharis* was described, and clear and concise details for their successful cultivation given.

NATIONAL CHRYSANTHEMUM.

DECEMBER 13.—A meeting of the executive committee took place at Cavan's Restaurant, Strand, on the above date, Mr. Thos. Berry in the chair. A report was made as to the amount of the prize money and medals at the December exhibition, which was generally lauded as one of the highest quality the Society has yet held at this season of the year. The chairman made a report as to the Annual Dinner, stating that the number pre-

sent was largely in excess of that of any previous dinner, all classes of horticulturists, with representatives of various municipalities, having come together to do honour to the new President, Sir A. K. Rollitt, M.P. A hearty vote of thanks was passed to all who had furnished flowers and fruit for the tables; and to Messrs. H. J. Jones and W. Cutbush & Son for decorating the hall.

The special prizes hitherto given by Mr. H. Beverill, Baburg, at the October show, and by Mr. K. Sydenham at the November show, were again offered and accepted with thanks.

The annual general meeting of the Society was fixed for Monday, February 3, and a hope was expressed that the President would occupy the chair. An interim financial statement of a satisfactory character was read, and there is every promise the Society will be able to wind up the season with a balance in hand.

HOLLAND.

AN EPOCHICAL.

If Mr. James O'Brien wishes to see a fine collection of *Anæchthodes* (*vide Gardeners' Chronicle*, December 7, p. 410), let him come to the Botanic Garden of Utrecht, where they have been grown for the last ten years with great success. Nothing else is used as potting materials than peat and sphagnum-moss, with a little sand. The principal point is: give them a place on the north side of a small house, and they will grow like weeds. J. K. Buddé, Curator, Utrecht.

ENQUIRIES.

Theory and Practice of Gardening, by John James. London: 1709. *New Principles of Gardening*, by Batty Langley. Twickenham: 1728. Will some reader of the *Gardeners' Chronicle* kindly inform F. W. M. if these books have any value from a horticultural point of view? They are, he tells us, of large size, and in good condition. (Only of value as historical curiosities, Ed.)

WHERE can I obtain specimens of the wood of *Nydia dolabriformis*? C.

MARKETS.

COVENT GARDEN, DECEMBER 19.

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

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.
Asparagus 'Fern,' bunch... ..	1 6-2 6	Lily of Valley, p. doz. bunches	9 0-18 0	
Carrots, per dozen blooms	1 0-2 0	Maidenhair Fern, per doz. bunches	4 0-8 0	
Cattleyas, p. doz.	9 0-12 0	Mignonette, per doz. bunches	4 0-6 0	
Eucharis, p. doz.	1 0-3 0	Oenotheras, doz.	2 6-6 0	
Gardenias, doz.	1 6-2 0	per dozen	2 6-6 0	
Lilium, Harrish, doz. blooms	5 0-8 0	Roses, Tea, white, per dozen	1 6-3 0	
Lilium lancifolm, p. doz.	3 0-4 0	— "Catherine Mermet, per doz.	2 0-5 0	
— "bluim, p. doz.	3 0-4 0	Smilax, p. bunch	3 0-5 0	
Lilium rubrum, per dozen	3 0-5 0	Tuberose, per doz. blooms	4 0-8 0	
Lilium longifolm, per dozen	5 0-8 0			

VEGETABLES, AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.
Artichokes, Globe, per dozen	6 6	Mini, new bunch	0 6	
— Jerusalem, p. doz.	1 0-1 6	Mushrooms, per lb.	0 9-1 0	
Asparagus, per bundle	0 6	Onions, cases	7 0-7 6	
— Paris Green, p. doz.	1 5 0	— in bags	5 6-6 0	
Barbelle Capucine, bundle	0 1	— picklers, per sieve	2 0-3 0	
Beans, split, house, per lb.	1 6	Parsley, per doz. bunches	1 6-2 0	
— Madras, 1 lb.	2 6-3 0	— sieve	0 9-1 0	
Beetroots, new, per bushel	1 3-1 6	Parsnips, p. cwt.	2 6-3 0	
— new, per bushel	1 3-1 6	— new, per lb.	0 3	
Broccoli Sprouts, sieve	1 6-2 6	— new, per cwt.	10 0-14 0	
Cabbage, tally	1 0	Radishes, p. doz. bunches	0 9	
— dozen	0 1-1 0	Rhubarb, Yorks, per dozen	1 6-2 0	
Cardoons, each	1 6-2 0	Salad, small, punnets, per doz.	1 3	
Carrots, per doz. bunches	1 0-2 6	— washed, bags	2 6-3 0	
— washed, bags	2 6-3 0	— sundry, per doz.	2 6	
— unwashed, per bag	2 0	Savoy, tally	5 0-7 6	
Cauliflowers, doz.	1 0-1 6	Sea-kale, per doz. bundles	12 0-1 0	
— dozn.	0 8-1 0	Shallots, per lb.	0 2	
Celery, per doz.	1 1-2 0	Spinach, English, bushel	0 6	
Celery, 12 bundles, per lb.	0 3	— Stanzly, lb.	2 0	
Cress, per dozen punnets	1 3	— Tomatoes, Eng. lish, dozen lbs.	1 6-2 0	
Cumbers, doz.	1 6-1 0	— Canby, boxes	1 3-2 6	
Endive, new	1 3-1 6	Turnip-Tops, doz. bags	2 0	
— dozn.	0 3-1 6	Turnips, per doz. bunches	1 0-2 0	
Garlic, per lb.	0 3	— "Bridgmanes, per doz. bunches	1 0-2 0	
Horseradish, foreign, bunch	1 0-1 6	Watercress, per doz. bunches	0 6	
— dozn.	1 6			
Lettuces, Cabbage, per dozen	1 0-1 4			

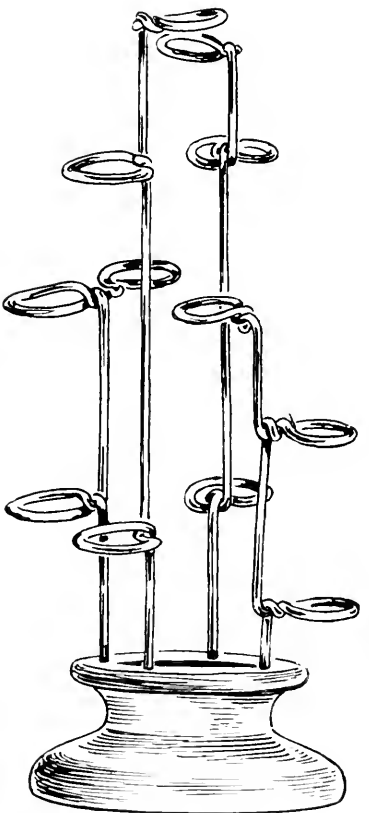


FIG. 140. AN ART DISSEMINATING OF PLANTS.

FLORAL AID.

IN fig. 140 we show a simple little contrivance made of wire, and painted green, which has frequently been exhibited at the Royal Horticultural Society's meetings at the Drill Hall, during the present year. It is the invention of Mr. C. J. Wakefield, 58, Hindon Street, London, S.W., and fulfils satisfactorily an oft-admitted want in arranging cut flowers gracefully in saucers, bowls, baskets, and vases. Three sizes are kept in stock by the maker and patentee, but it can be made of any desirable size.

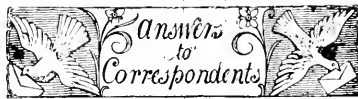
FRUIT.—AVERAGE WHOLESALE PRICES.

Table listing fruit prices for various items like Apples, Grapes, Lemons, etc. with columns for 's.d.' and 's.d. s.d.'.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Table listing prices for plants in pots such as Adiantum, Arabis, Aspidistra, etc.

REMARKS.—The quantity of well-berried Holly is not large, and the price asked for it is high. Mistletoe fetches from 7s. to 10s. per crate. Citrons in cases of fifteen fetch 5s. to 6s. Belgian Grapes, 4s. to 10s. per lb., and home-picked Lychnis from India have been offered for sale. Pansies are nearly over for the season.



ADVERTISING FOR A SITUATION: P. S. Noug is more suitable for your purpose than the Gardeners' Chronicle.

ANTS IN GREENDUSES: Ants. We would advise the purchase of the Ballikinrain Ant-destroyer, of A. Cross & Sons, Ltd., 19, Hope Street, Glasgow.

ARTIFICIAL AND OTHER MANURES FOR GRASSLAND: Grass-plot. If the land is in poor condition, a dressing of rotten stable or farmyard manure, wood-ashes (2 lb. to a square yard), and loam, may be applied. This may be spread in February before the grass begins to grow; and when the lawn is raked clean of all debris in early April, seeds of fine lawn grasses may be sown. If the turf is in a patchy condition or coarse grasses abound in it, Sulphate of ammonia may be applied as an early dressing, as it takes some time to get nitrified; or nitrate of soda may take its place after growth of grass has begun, it being somewhat available as a plant food. Artificial manures of the kind mentioned may be applied at the rate of 3 1/2 cwt. per acre. The other dressings, mixed, need not be heavier than is sufficient to just render the grass invisible for a short time. All coarse weeds and grasses, Daisies, Plantain, Yarrow, &c., should be spudded out before anything is done. If the turf is mossy, mix two cartloads of lime with eight of loam, turning it once or twice, and apply in face of, or in addition to, the dung, using less of the latter, or none at all. Without knowing the condition of the lawn, and the kind of soil, we can only advise generally.

ASPARAGUS: J. F. Dress the beds with rotten dung or seaweed at this season, and in very early spring rake off this into the alleys, and apply agricultural salt at the rate of 2 to 3 ounces per square yard, and a similar dressing of nitrate of soda. This dressing may be once repeated in May or June.

BEGONIA GLOIRE DE LORRAINE: Roxburgh. The parents of this variety employed by Mr. Lemoine, of Nancy, were B. socotrana and B. Dregei. Veitch has raised the same variety from B. socotrana and B. Moonlight. [See last week's Gardeners' Chronicle for an interesting article on Winter-flowering Begonias, by Mr. G. Schneider.]

BOOKS: W. Sharpe. Vines and Vine Culture, 3rd edition, by A. F. Barron, may be obtained from the author, E. Sutton Road, Chiswick, W.; or at the office of the Journal of Horticulture, 12, Mitre Court Chambers, Fleet Street, E.C.—Decorative. We know of no such book as that you desire to purchase. You may meet with Annie Hassard's Table Decorations at the bookstalls.—W. Fowler. A Symposium, and How to Grow and Show Tea Roses. You should apply to Mr. Ed. Mawley, Rosebank, Berkhamsted.—H. Hartill. Fruit Farming for Profit, by G. Bunyard, Old Nurseries, Maidstone, published by F. Bunyard, Week Street, Maidstone; The Art of Grafting and Budding, by Balte, to be had, if still in print, in English of W. Robinson, 37, Southampton Street, Strand, W.C.

COLLAGYNE CRISTATA: J. F. When growth is perceived in the roots and pseudo-bulbs, divide up and repot, keeping moderately warm and moist, but not directly affording much if any water.

CORRECTION: In referring to the Rose and Carnation awards at the New York Florists' Club Show in a recent issue, read: "The bronze-medal went to a new scarlet-flowered Carnation. The Rose was exhibited by Mr. John May, Summit, N.J., but it originated near Boston."

DRESSING FOR GRAPE VINES: T. Challis. Wash them with petroleum emulsion twice before the buds burst, and thoroughly clean, paint, and lime-wash the vine, and take away the upper crust of soil, replacing it with new soil, bone-meal, superphosphate of lime, or fresh lime. No need to paint the vines with any compound if the cleansing be well done. Use a brush, and take care to clear out the hiding places. For a method of making a petroleum tree-wash that will not harm Vines, &c., see p. 452 in present issue under "Fruits under Glass."

LILYMS: J. H. S. The reply was given in our issue for November 16, in "Answers to Correspondents," under initials "I. H. S."

MANURING A VINE-BORDER: Doer. Yes; during the winter and early spring, and unless the soil is of a light nature, it should be lightly forked or raked off. A summer mulch is beneficial to Vines in light soils; farmyard manure partially decayed answers very well. On heavy land summer mulches are better avoided, and the border lightly dug and left rough. Two or three applications of dung-water or diluted contents of the cesspud doing more good. Some of Thomson's Vine-manure may be distributed and washed in with clean water, or left for the rain to carry to the roots. The Vine is an omnivorous consumer of liquid manures, but solid manure often applied ruins the soil in a few years.

NAMES OF FRUITS: Carriek. 1, Rymer; 2, Mank's Codlin; 3, Scarlet Leadington; 4, Seek-no-Farther; 5, Golden Reinette; 6, the fruits were both in bad condition for determination, but we believe the variety is Nelson Codlin. Thanks for the particulars given, and the careful packing.—A. R. 1, Margi; 2, Hollow-crowned Pippin; 3, Waltham Abbey Seedling; 4, rotten; 5, Winter Nelis; 6, Golden Winter Pearmain. The labels were not affixed to the fruits, and some had become misplaced.—G. O. R.

Russet: Horsham Russet; red: Reinettes Van Mons; lemon: Tarvey Codlin.—Rogston 1, Northern Greening; 2, Golden Ducat; 3, Flower of Kent; 4, Hanwell Souring; 5, Melrose; 6, Mank's Codlin.—E. C. T., East Yorks. Your fruits were carefully packed and labelled; it is a pleasant task to deal with such samples. 1, Dutch Mignonne; 2, Golden Noble; 3, Dumelow's Seedling; 4, Nelson Codlin; 5, Allrington; 6, Hanwell Souring; 7, Round Winter Nonsuch.—R. A good example of Cox's Orange Pippin.—B., Sheffield. The Pears sent were not in suitable condition for the determination of their names; they were also under the average size. The following are the only numbers received:—3, Beurré Sterckmann; 4, Broom-park; 5, Alexandre Bivort; 6, Beurré Allard; 7, Beurré d'Arenberg; 10, quite rotten.

NAMES OF PLANTS: W. T. Acanthus mollis, L.—Rosa, Manchester. 1, Arrhenatherum avenaceum; 2, Phalaris arundinacea; 3, Panicum capillare; 4, Aristida vestita. A. B. R.—Oncid. 1, Scopodendrium vulgare; 2, Quercus Ilex; 3, Vinca major variegata; 4 and 5, forms of Thuya occidentalis.—R. E., Bristol. C. irrhoptelatum Cumingii, J. E. Glechoma hederacea variegata (Variegated Garden Ivy).—J. N., Warwick. Dendrobium bigibllum.—Foreman, 1, Laelia autumnalis; 2, Laelia albida.—H. P., Brassia glumacea. F. M., Laelia autumnalis, of the form which approaches Laelia Goudiana, which was figured in the Gardeners' Chronicle, Feb. 8, 1890, p. 169.

NEW ZEALAND AND AUSTRALIA: J. C. B. Both colonies abound in opportunities for industrious men with a good knowledge of gardening; not so much as gardeners in private places, but these are not, as yet, very numerous, but as supplying the needs of people living in towns, and cultivating fruits, including Grapes for wine-making and drying, Pine-apples, fibre-yielding and dye plants. New Zealand affords a fine climate for hardy fruits, the cultivation of timber-trees, and for farming and stock-rearing. Some capital is needed, and the new-comer should not rush into business as soon as he lands, but should take service with an old colonist for a year or two, till the peculiarities of the climate and of practice are understood, and an insight has been obtained into the methods of conducting business.

SULPHIDE OF POTASSIUM: Young Gardener. At the rate of 1/2-oz. of the sulphide to 1 gallon of water, no harm will be done to the plants.

TEMPERATURE: Ignoramus. The temperature you mention, a maximum of 55°, is not sufficient to develop the Gardinia-buds at this dull season of the year. The bud sent shows plainly that it had been formed under more favourable circumstances, and then probably a sudden fall of the temperature during some of the cold nights has caused them to decay.

COMMUNICATIONS RECEIVED.—Inquirer—Mrs. J.—Professor Eric, Rennes.—A. H. S.—J. C.—Dr. Schumann, Berlin.—H. G.—H. G.—E. M.—W. J. S.—A. L. J. H. S.—As you suggested, consigned to the W. P. B.—E., Sheffield.—E. C. T., Farnham.—T. H. B.—Vaughan Bros.—W. S.—W. P.—G. H. J. D.—A. P.—T. H. S.—D. R.—J. D.—R. D.—E. J.—G. L.—G. W.—W. R.—J. C.—J. R.—C. T. D.—J. D. G.—J. H.—Anxious Gardener.—E. W. S.—W. F. G.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE." IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

40% TREBLED.

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

(Remainder of Markets and Weather, see p. viii).



ORNAMENTAL GOURDS IN THE CAMBRIDGE BOTANIC GARDEN.



THE

Gardeners' Chronicle

No. 758.—SATURDAY, DEC. 28, 1901.

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CANTALOUPE MELONS.

MOST of us know by sight if not by taste the flattish, globular, deeply furrowed Melons of the fruiterers' shops, and those who frequent the continent, more especially France, Austria, Italy, Spain and Portugal, will be well acquainted with Cantaloup Melons, which, during the season, invariably make their appearance at the principal meal of the day.

No traveller has discovered the Melon as a wild plant, and we have good reason for the supposition that it had its origin in that home of so many delicious fruits—Persia, Mesopotamia, Bokhara, or the lands bordering thereon. The Melon has been a favourite, cultivated from very remote antiquity, and is the Pepon of Dioscorides, the Meloponon of Galen, and the Melo of Pliny.

The Cantaloup variety derives its name from Cantaluppi, a seat belonging to the Pope, near Rome, where the variety, brought by some missionaries from Armenia, was first cultivated.

The fruit passed to Florence, thence to France and Spain and this country, where according to some authorities, it has been cultivated since 1570, but the exact date is unknown. The variety is extensively grown on the Continent, in frames set on hot-beds, in those countries which have cool summers, and in the open air in Italy, southern France, Spain and Turkey.

Melons come much more largely into the dietary of the inhabitants of those countries, its insidious flesh and perfumed sweetness being more satisfying than water, and safer than wine.

In our cool climate the consumption of Melons, taking the country as a whole, is very small; although in the towns Water-Melons are largely consumed, and the pulp of Water-Melons enters into the manufacture of certain kinds of jam. But the Cantaloup remains in Great Britain a fruit for the well-to-do, although when very plentiful it is found on the costers' barrows, being retailed at a penny per slice.

The plant can be cultivated with less bottom-heat than our thin-skinned varieties of Cucumis Melo, and is a rather more robust plant. Like summer Cucumbers, it may easily be grown in common garden-frames, set on hotbeds of tree-leaves and stable-litter of a thickness of 2½ to 3 feet. It ought to be as common as the Vegetable-Marrow from the end of June till the end of September; and the market-grower who would embark its cultivation on a large scale would doubtless not have reason to repent of his venture, the demand increasing with the supply. Melons have been of late years both scarce in our markets, and many that we have tasted have rarely been of high flavour. Even in the home of the Melon, the fruit is very apt to deteriorate, and super-excellence is only obtainable by rigid selection, as in many other subjects. Deterioration in flavour must have set in here, for lack of skill on the part of the gardener, or the exigencies of the season, are not reasons which can be entertained.

In view of this fact, why should not our gardeners grow the Cantaloup Melon? or do they attach large size with poor flavour? We know that the small Melons of English growth were as poor in flavour as the large ones in the last three or four years. Its greater hardness is undeniable, its culture easy, and the period during which it will keep after being removed from the plant greatly exceeds that of our Melons. We cannot suppose that our neighbours across the Channel, who are no mean judges in matters connected with eating and drinking, and who have given us our best Pears, and not a few delicious varieties of Grapes, as instance the numerous Frontignans and Chasselas, would continue to grow and consume Cantaloup Melons if there was not something more than mere size to distinguish them.

The Melon-plant requires a period of from four to five months to bring its fruit to maturity, the mid-season being the shorter period. In order to have fruits ripe in the second or third week in May, seeds must be sown in the middle of January, preferably in pots or deep pans on hotbeds having a day temperature of 70°, and 58° to 60° by night. The seeds should be sown in loamy soil to the number of six in a Finch pot, the soil beneath them being made firm, but that which covers them to the depth of about ¾ inch being merely placed in the pot without hand pressure. This method of sowing enables the young plant to come through the soil without tubercles, whilst the firmer soil into which the radicle has penetrated attaches itself as a compact little mass when the plant is carelessly lifted singly and potted; or, as in the case of great numbers being wanted, pricked out on a bed of soil over bottom-heat. The bottom-heat of the seed-bed should not exceed 80°, or that of the nurse-bed, if it be quite eased with soil, 75°. In these respects the raising of Cantaloup

Melons does not differ from other varieties. With properly constructed hot-water pits of low pitch, the raising of the plants is attended with few difficulties, and the heat is more easily afforded and controlled; still, the old-fashioned hot-bed supplies ammonia, from which Melons derive much benefit, and in which grow strong and stocky; and this is mostly absent from hot-water heated pits.

Being intended for cultivation in frames there is no necessity to allow the plant to make a tall stem before stopping it, and this is usually done between the second true leaf and the third; and as soon as the third leaf has developed a little, not waiting for the next to show before nipping out the growing point. This operation results in the production of two shoots, and these, when stopped close home, give two each—in all four shoots, which are enough. When the seeds are sown, the making of beds in which the plants are to be planted for fruiting must engage the attention of the gardener. These hotbeds may consist entirely of stable-litter well mixed and fermented, and purged of the ranker fumes of fermentation by being turned and thrown together into a heap or heaps twice or thrice. Preferably, a hotbed of this kind is more economically made in an excavation 2 to 3 feet deep than on the surface of the ground, as by packing unfermented litter round it at the first when the heat of the bed is greatest, and warm stable-litter later when the warmth is declining, the loss of heat in the bed is largely prevented. Rows of frames on hot-beds made close together may be placed in such excavations, being constructed successively as they are needed. Where an excavation cannot be made, thick turf walls, or banks of earth, may form the enclosure, and for the purpose of getting conveniently to the frames, planks are laid between the lines of frames. We favour the formation of a hillock of soil, chiefly turfy loam, or loam three-quarters, and rotten stable-dung one-quarter, under each light, the apex being brought to within 6 inches of the glass; and it is good practice to place slates or boards under the soil, so that the roots may not readily enter the dung at the least, not in the early stages of the plant's growth. The plants being set out on the hillocks to the number of two for a frame of 6 feet in width, and one for a smaller frame, the after-treatment does not differ greatly from that of other kinds of Melon-growing as practised in this country, bottom and top-heat being kept up from first to last—rather increasing it, in fact, towards the ripening stage than letting it decline. Before the plants quite cover the area within the frame, the amount of soil must be increased, but the mass should thin out at the sides somewhat, so as to afford a certain decline of the surface from the apex where the plants stand.

The Cantaloup Melon need not be treated as quite so tender a plant as our thin-skinned varieties; but in the months of July and August the frames may be raised on bricks, &c., and the bine allowed to ramble outside, the greater mass of foliage thus attained leading to great vigour in the plant, and size in the fruits. Our gardeners strive to obtain the same results with closely-stopped and trimmed plants grown in hot-water pits and Melon-houses by means

of manure-water and rich top-dressings and much heat and moisture, and the consequence is a loss of flavour in many cases.

When the line is allowed to ramble outside, enough air is admitted under the sides of the frame for the well-being of the plants, and only on the hottest days is there any need to ventilate by means of the lights. Melons should never be shaded, and they never need it, unless there has been coddling in the first stages.

In Paris gardens the crop of Cantaloups which ripens in the month of May is said to be "forced"; the crop ripening in June and early in July is "of the season," or the general crop. The late crops last from July to early in October.

There are, therefore, three chief sowings in northern France, which furnish fruits so long as Melons in those latitudes are required, or are of fair flavour.

The methods pursued in raising the second and later successions of plants do not differ from those described for January, but the weather getting warmer then, they come along with less trouble to the cultivator.

The second crop of plants is sown in February, and consist usually of the Cantaloup Prescott, a *fruit blanc*, a much esteemed variety. The seeds for the general crop are sown in time for planting out in May.

We append the names of a few favourite varieties, together with the descriptions, as found in MM. VILMORIN'S *The Vegetable Garden*:-

Algerian Cantaloup, one of the hardest of the summer Melons, which surpasses all of them, perhaps, in uniform goodness of quality. Flesh thick, juicy, perfumed, and always very sweet. Fruit slightly elongated, sometimes spherical; with roundish warts, which, as well as the bottoms of the furrows, are of a very dark green colour, the rest of the skin being silvery. The dark green parts change eventually to an orange colour, but this does not develop till the fruit is over-ripe, so that it should be gathered before the change takes place. Length of fruit 6 to 8 ins., cross diameter 5 to 8 ins.

Green-fleshed Cantaloup, a medium-sized, branching, rather slender-stemmed plant. Length of fruit 5 to 6 ins., smaller diameter rather less than this; weight 2 lb. 10 oz. to 3 lb. 5 oz. Skin pale green at the bottoms of the furrows, slightly warted on the convexity of the ribs, which are marbled with white and with dark green. Flesh pale green, very thick, melting, juicy, sweet, and delicately perfumed—one of the finest varieties.

Prescott Early Frame, a medium-sized plant; fruit spherical, slightly flattened at the top and bottom, slightly warted, marbled with dark green on a pale green ground; and bottom of the furrows olivo-green in colour. Flesh orange coloured, thick, juicy, and melting; diameters 5 to 6 inches, and 4 to 5 inches. A plant should only carry one fruit for the early crop; two for the general crop. The variety is remarkably early, and the quality is always excellent.

The large Paris White Prescott is a rather vigorous growing plant; fruit large, and much flattened at the top and bottom, ribs broad, and protuberance of all shapes, and irregularly variegated with dark and pale green. The flesh is of an orange tint, very thick, fine flavoured, juicy, and melting. The skin also is thick, diameter 9 to 11 inches, depth 5 to 6 inches, and weight ranges from 5 lb. The plant may carry one or two fruits.

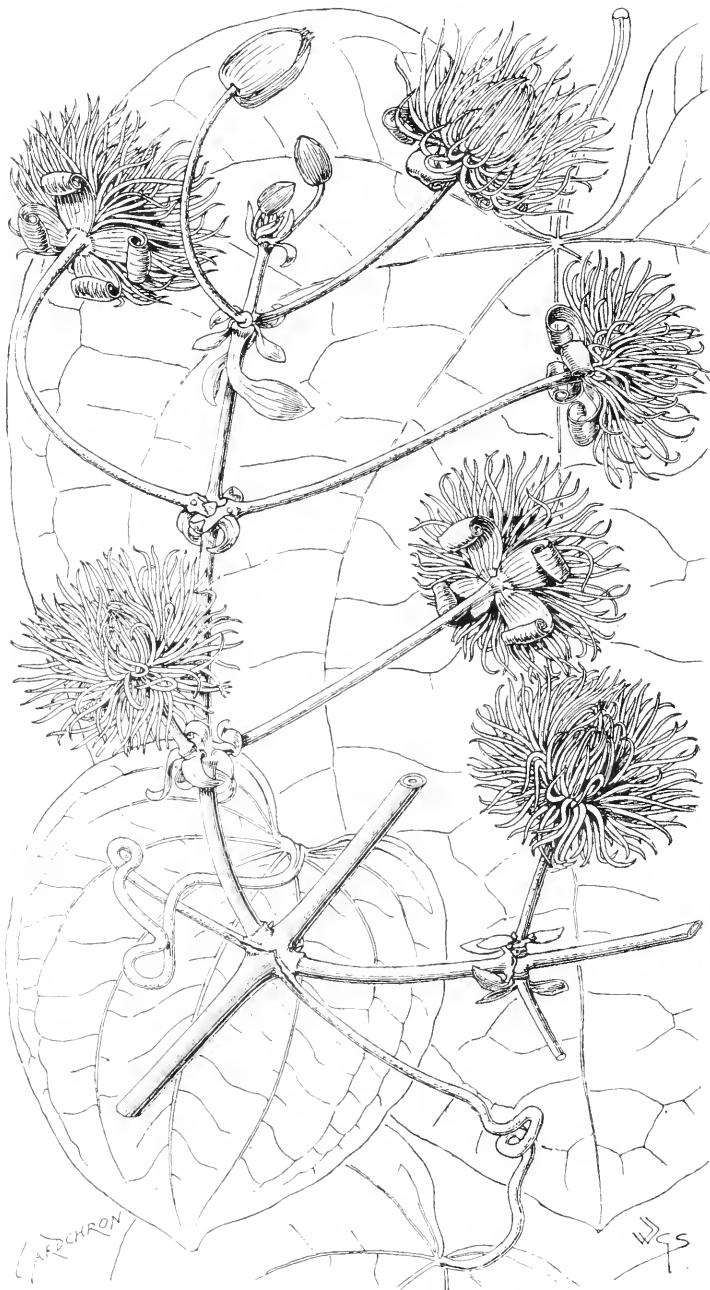


FIG. 141.—CLEMATIS SMILACIFOLIA.

CLEMATIS SMILACIFOLIA.

For the opportunity of showing this species (fig. 141) we are indebted to Mr. R. I. Lynch, the zealous curator of the Botanic Garden, Cambridge. According to Sir Joseph Hooker's *Flora of British India*, it is a native of the

Sikkim Himalayas, ascending to 5,000 feet and has also a wide distribution in the Khasya Hills, Concan, Burma, Java, Borneo, and the Philippines. It is a climber with large, simple, leathery, glabrous, dark green, cordate ovate leaves, with seven nerves spreading from the base, convergent at the

apex. Flowers 1 to 1½ inch in diameter; sepals coriaceous, oblong, brownish, at length revolute, purplish in the interior. For further details see Hook. *Flor. British India* (1875), p. 3; *Bot. Mag.*, t. 4250.

PLANT NOTES.

RUELLIA MACRANTHIA.

PLANTS of this pretty species (fig. 112) are now in bloom generally, and in the garden of T. F. Blackwell, Esq., The Cedars, Harrow Weald, the

NEW OR NOTEWORTHY PLANTS.

LIBOCEDRUS MACROLEPIS.

THIS Conifer was originally discovered in the Chinese province of Yunnan, by the late Dr. J. Anderson, and was described by Mr. S. Kurz in the *Journal of Botany* under the name of *Calocedrus*. It was afterwards reported by Mr. Bourne, from Formosa, where it is stated to furnish valuable timber. It is very nearly related to *L. decurrens*, of California, and to *L. chilensis* and *L. Doniana*. The mention of these names illustrates the very remarkable

miocene deposits of Switzerland and of south-eastern Europe, in the amber of the Prussian provinces of the Baltic, as well as in the tertiary strata of Spitzbergen, and in our own country in the Isle of Sheppey (see Renault, *Cours de Botanique Fossile* (1885), p. 138, tab. 15, fig. 1; also in Zeiller, *Elements de Paleobotanique* (1900), p. 275).

The genus is very closely allied, too closely perhaps, to *Thuja*. The distinguishing characteristics are to be found in the erect cones, the smaller number of scales, of which the central pair only is fertile, and in the frequent coalescence of the two uppermost

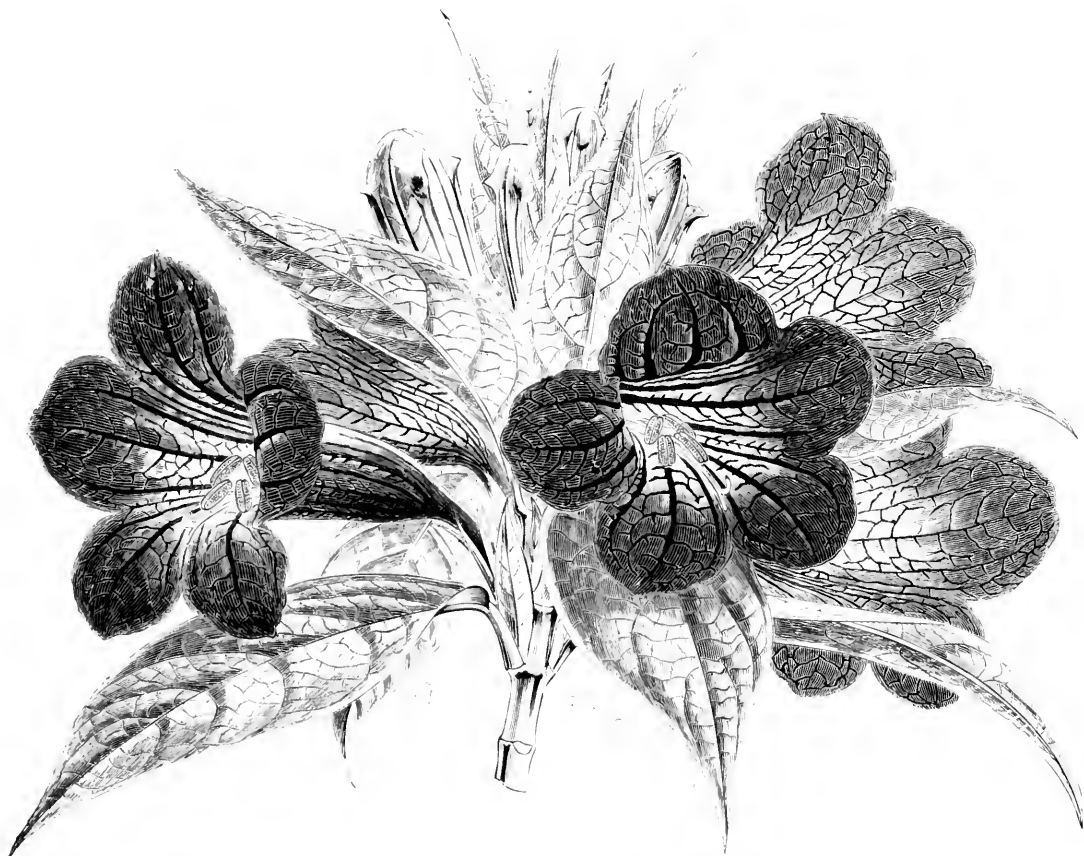


FIG. 112.—RUELLIA MACRANTHA; FLOWERS ROSE PURPLE.

plant is now making a fine display. Together with *Plumbago rosea*, Gesneras of the *Nægelia* section, varying from white to yellow, orange and scarlet, the showy rose-coloured *Centropogon Lueyanus*, *Calanthe Veitchii*, *Poinsettias*, *Begonias*, &c. The *Ruellia* is raised from cuttings annually, and by the advent of winter these make compact flowering plants of a suitable size to work into floral arrangements of almost any kind. The range of plant-houses has a very bright display of flowers, together with a few *Cattleyas*, *Odontoglossums*, &c. Here, as in other gardens, *Begonia Gloire de Lorraine* takes the lead as a producer of an almost perpetual crop of pretty flowers.

distribution of the plants of this genus, which occur in south-west China, in Formosa, the mountains of New Guinea, in Chile, New Caledonia, and in New Zealand. The presence of the plants in these widely separate areas betokens that the type is a very ancient one, but leaves the question as to how they could have spread from one locality to another unsettled. In geological periods before existing circumstances, the plants grew even in a much wider area, for fossil remains have been detected in the middle cretaceous strata, in the

Libocedrus macrolepis, Rendham, in Rendham and Hook. *Gen. Plant.*, iii. (1849), p. 426; *Calocedrus macrolepis*, Kurz, in *Travels*, *Journal of Botany* (1875), p. 193.

scales into a vertical plate. The seeds, moreover, are solitary and obliquely winged" (Masters, in *Journ. Linn. Soc.*, vol. xxx., 1892, p. 20).

We are indebted for the opportunity of examining a seedling plant of the Chinese species to the kindness of Messrs. James Veitch & Sons, by whom it has been introduced into cultivation. It is doubtful whether it will prove quite hardy in this country, unless perhaps in the south-west of Ireland.

The species is a tree with flattened branches, coriaceous leaves, glaucous especially on the outer or under surface, decussate, the lateral ones conduplicate, oblong with a

long awn, the median leaves flattened, oblong, obovate, shortly mucronate, 7 to 8 mill. long, 3 to 1 mill. broad. The cones are solitary, about 2 to 2.5 cent. long, elliptic, obtuse; the two lowermost scales minute recurved, the middle pair erect, elongate, fertile; the two uppermost small, sterile, connate into a vertical septum. Seed, one to each fertile scale, oblong, much shorter than the obliquely falcate wing, which is only a little shorter than the cone scale.

The mode of growth in the species of *Libocedrus*, and other allied genera, is worthy of attention. The shoots are flattened, and bear four rows of leaves arranged in decussating pairs. The branches are given off exclusively from the axils of the lateral, never from the axils of the median leaves. The side leaves are "decurrent," that is to say, they are uplifted with the growing branch, whilst the median flat leaves are not decurrent, but remain comparatively stationary.

There is thus an alternation of growth, the lateral part of the internodes of the extension or leader shoots growing rapidly, the central portions much less quickly, as may be seen by sections across successive internodes, and indeed by mere superficial inspection. At the end of each internode are the four free tips of the leaves, two in the middle, one above and one beneath, and one on each side of the shoot. Taking as our starting-point the tips of any two median leaves placed fore and aft, as regards the branch which bears them, it will be seen that they are about on a level with the tips of two side leaves or a little below them, and that they are removed by some considerable interspace from the tips of the pair of side leaves immediately above them. These side leaves are, as has been just stated, markedly "decurrent" or adnate to the branch at their base, and carried upwards with the shoot in its growth. Though relatively so far removed from the median pair of leaves next below them, they are really morphologically nearest to them. This arrangement may be made clearer by the following diagram, where *l l* represent the lateral, and *m m* the median leaves; the leaf-tips marked *l l* do not belong to the adjacent *m2*, but to the pair below, *m1* :—

l2 m3 l2

l1 m2 l1

l m l

This arrangement is not peculiar to *Libocedrus*, but is particularly well seen in *Libocedrus chilensis*, wherein the median leaves are very much smaller than the lateral ones. It is much more apparent on the rapidly growing "extension shoots" than on those where growth in length is relatively much less. In *L. tetragona*, where the leaves are uniform and the shoots four-sided, the peculiarity is not observable. It is the herbaceous investment of the younger branches that gives them their flattened character and oval section. In the older branches and in the trunk, the stem is cylindrical and the section circular.

The species of *Libocedrus* admit of being arranged in three groups, as follows:

- Shoots 4-cornered;
leaves uniform,
spreading *L. tetragona*, Chile.
Shoots flattened;
median leaves flat,
appressed, lateral
leaves conduplicate.

Leaves on adult
shoots nearly
equal in size *L. Bidwilli*, N. Zealand;
L. decurrens, California;
L. macrolepis, Yunnan.

Leaves on adult
shoots unequal in
size *L. Doniana*, N. Zealand;
L. chilensis, Chile;
L. papuana, N. Guinea;
L. austro-caledonica, N.
Caledonia.

M. T. M.

MONOCHORIA VAGINALIS VAR. KOERSAKOWI.

Regel Garten Flora (1862), 374.

To Mr. Henkel, of Darmstadt, we are indebted for specimens of this pretty tropical aquatic. The leaf stalks are dilated at the base into a ventricose sheath, the upper part terete and expanding into a cordate, broadly ovate, acute blade. The flowers are in stalked racemes, perianth six-parted, blue; anthers, five, yellow, one blue, straight, basifixed opening from above downwards by a long pore-like slit; ovary three-celled, with numerous ovules in each cell. It was originally described by Presl, and is confirmed by Solms Laubach in the *Suites to the Prodromus*, iv., 521; by Hooker in *Flora of British India*, vi. (1894), 363; Nicholson's *Dictionary*, ii., 378, and numerous other authors. The leaf-stalk is traversed with numerous air-canals, and the central cavity is divided by several horizontal cellular septa—all arrangements for securing lightness and strength. The varied colour of the anthers is very remarkable. The pollen is yellow in all the anthers; the filaments are blue, and one or more have spur-like processes near the base.

The Week's Work.

PLANTS UNDER GLASS.

By D. KONGERS, Gardener to HESSAY PACE, Esq.,
Prestwood Hall, Loughborough.

The Rose-house.—If the pruning and training of the more permanent plants are now completed, the house may be closed forthwith, beginning with a temperature of 15° at night and 50° by day. In cold weather it is preferable to lower the degree of warmth 5° than to endeavour by artificial heat to obtain the higher figure. Roses being plants that are readily brought into growth by the application of warmth, it is not good practice to hasten growth too much, in view of bad weather occurring during the next two months, when it might be impracticable to maintain a suitable degree of warmth or to afford the required amount of ventilation.

Roses in Pots should be pruned forthwith, brought under cover, and forced in batches according to the demand. The plants in the Rose-house should, for the time being, have only a light occasional dewing over on very fine mornings.

Tree Carnations.—Cuttings should be taken as fast as the shoots attain to the right size, and be struck in the manner indicated by me in earlier *Calculators*.

Hippocisterns.—Those which have been the longest at rest are showing signs of activity, the flowering-spike being visible on many of the bulbs, so that no time must be lost in overhauling them. For immediate potting, select the more forward bulbs, and place the less active in a cooler house. Last season I placed the latest bulbs in the fruit-room, where the temperature was about 35°, and they kept in perfect condition till the middle of the month of February, flowering at Easter-tide, and later.

Campanula isophylla and *C. l. alba* may now be propagated from cuttings inserted to the number of four round the edge of small 60-pots, plunging them in a bottom-heat of 65° to 70°. When rooted, pot on, or place in baskets with-

out disturbing the roots. They make lovely objects with which to furnish the fronts of the greenhouse stages.

Fuchsias.—The old plants which are at rest may now be pruned, and placed in a temperature of 50°, keeping them daily syringed, with a view to obtaining early break shoots for propagating purposes; young, vigorous plants being more satisfactory than aged, decrepit ones. Pot up those raised in the autumn, affording them a temperature of 55° and a place in a pit or on a shelf close to the glass in a warm house.

General remarks.—Cut down aged plants of *Abutilons*, in order to obtain shoots fit for cuttings, likewise *Eranthemums*, *Plumbagos*, and *Habrothammus*, and place the stools in a moist house having a temperature of 55° to 60°. Let the leggy stems of *Draecenas*, *Crotons* and *Ficus* be mossed round as a means of securing young plants with well-coloured foliage. Give an eye to all frames and pits containing *Calceolarias*, *Cinerarias*, *Violets* and other plants with soft foliage, removing decaying leaves and ventilating on every favourable occasion. Plants infected with aphid should be isolated for fumigation, or dipped in weak tobacco-water or in a mixture of carbolic soft-soap 2 oz., and warm water one gallon.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Fruit Tree Borders.—When the operations of pruning, cleansing, and training of wall-trees are finished, clear the borders of rubbish, burning this forthwith. Fruit-tree borders should not be cropped, but a width of at least 1 feet, measured from the base of the wall, should be left for the tree-roots, excepting that a line of *Violets* or *Parsley* may be grown close to the wall; but when this is practised, the plants should not approach the stem of the fruit-trees close by. The alley of 4 feet in width may be "pointed" over with a digging-fork to the depth of an inch or two, having first scattered over it a small quantity of fresh lime and wood-ashes. The borders in which Plum-trees are planted are usually filled with roots, many of them near the surface, and such borders should merely have the surface-pricked over, or be top-dressed with a small quantity of fresh soil and charred garden-refuse. The land beyond the 1-foot alleys should, if cropped with vegetables, be dug only one spit in depth. When the ground is not frozen, weakly trees and those that have cropped heavily may be afforded manure-water once or twice during the next month.

Top-dressing Trees in Orchards.—After the pruning and dressing the trees are finished, collect the prunings and other rubbish and burn it. If the orchard is intercropped with fruit, bush or other fruits are to be preferred to those kept under grass, and the trees are more productive than those if the mode of cultivation is right and suitable. The ground when the rubbish is cleared off should be dressed with a mixture of wood-ashes, old mortar or plaster, leaf-soil, and rotten manure, in greater or smaller quantities, according to the state of the trees and the condition and texture of the soil, and slightly digging the land with forks, and rooting out root-suckers and deep-rooting weeds. Refuse-soil of any kind is of much assistance to orchard-trees if spread over the roots. Orchards consisting of vigorous young trees will not require this kind of assistance. Trees in grass orchards should be afforded liquid-manure, and a dressing of rotten dung early in January.

Bush-fruit and Raspberry-quarters.—When the Raspberry-canecan are fastened to their trellises or stakes, &c., the land should be cleaned and manured. The points of the canes may be left intact for a month or two longer, as with severe frosts, if cut back now, they sometimes get injured. The Raspberry being mainly a surface-rooting plant, the ground immediately round about the stools should be cleared of weeds and rubbish, and a scraping of the surface soil, the whole being brought to the middle area between the rows and dug in, a little of the freshly turned-up soil being

scattered round about the stools. For a space of 18 inches in width on either side of the rows, let a dressing of rotten manure be spread.

Currants, especially the black, may be similarly treated. Digging among Gooseberry-bushes should not be practised within the rooting area; but rubbish should be removed, and a top-dressing of refuse soil and wood-ashes scattered over the surface.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Cattleya-house.—*C. Percivaliana*, which is not one of the largest-flowered species, is one of the most useful, seeing that its flowers are produced in the winter. In town districts there is a difficulty experienced in getting the flowers to expand to advantage. In such cases the plant, as soon as the flower-buds are visible in the sheath, should be placed in a very light position near the glass.

C. Trianaei.—The flowers of the early-flowering varieties are now advancing, and more moisture at the roots should be afforded, and the plants placed in the warmest part of the Cattleya-house. If plants of *Lycaste Skinneri* are grown in this house, some of them will be in flower; and owing to the dry conditions of the Cattleya-house, it will be necessary to afford them a liberal quantity of moisture at the root, it being a mistake to allow them to get dry at the roots at any season. The good effects of sunlight are felt likewise by *Lycastes* when coming into bloom, the flowers opening satisfactorily, and the colours being improved thereby.

Phalenopsis.—About London, the early-flowering plants suffered great loss of buds during the recent fogs. *P. amabilis* and *P. grandiflora aurea*, more especially at Camberwell, the early buds being all destroyed; but as these species nearly always produce flowers a second time if the flower-scapes are not removed, the loss is not serious. Before allowing plants to carry flowers twice, regard must be had for the strength of the plants, and if the plants are weak, it should not be allowed. Few cultivators of *Phalenopsis* will dispute the fact that many of the failures to grow two species satisfactorily are attributable to the freedom with which they flower, and the length of time the flowers last. I would advise gardeners to remove the flower-spikes unless the plants are in a fairly vigorous state. The advantages obtained by removing the flower will be apparent the next season in increased vigour. *P. Schilleriana*, *P. leucorrhoda*, and other hybrids have lost their flower-scapes as well as the buds, but being later flowerers than the two species above mentioned, they escaped the early fogs, and give promise of a good display if favourable weather ensue. *P. Staniana* and *P. intermedia* being later still, do not exhibit any effects of the fog. The plants that have had their scapes removed will require but little moisture, merely a slight wetting of the surface of the compost and the roots about the baskets will suffice. At such time as the flower-scapes are developing, afford full sunlight and a greater quantity of moisture; the glass being kept bright and clear.

THE KITCHEN GARDEN.

By J. MAXINE, Gardener to the Hon. MAJOR BOLLE, Bolton, East Radcliffe, Yorkshire.

Kidney Beans.—If a sowing be made at this date, by the time the plants come into flower the days will get longer, and the light will be increased, and thus the setting of the flowers will be less uncertain. The soil with which the seed-pots are filled may consist of exhausted Mushroom-bed manure, putting this over the crows, and the rest a light turfy-loam, the whole being pressed down firmly. Place beans in each pot, which should be 32's, and cover with an inch layer of soil. Stand the pots in a house or pit having 60 of warmth at night, and 65 to 70 by day. Afford no water till the plants are well above the soil, when the lightest place in a house or forcing-pit should be given them. As a means to

prevent elevation of the stems, water should be sparingly applied until growth has advanced considerably, but ply the syringe among them once or twice daily, according to the state of the weather. Put twiggys supports to the plants when they are 4 inches high, keep dry overhead whilst in flower, and as soon as the pots are set apply weak manure-water bi-weekly. Afford air with caution for two hours when the warmth in the house stands at 70.

Potatoes.—The sets that were started a month ago should be planted in 10-inch pots before the roots get matted together. Personally I prefer boxes 2 feet long, 8 inches wide, and 10 inches deep; but in whatever contrivance grown, good drainage should be given, and a similar soil to that employed in the Bean-pots should be made use of, excepting that it need not be of quite so light a nature. Place this in heat a day before the sets are planted. If pots of the size indicated are used, one set in each will be enough, and five sets can be planted in each box. An early Peach-house or vinery that has just been closed is a suitable place for the Potatoes at the present date, and as growth advances remove them to a cooler structure, and place close to the glass, affording air freely in mild weather. Earth up when 6 inches high, and place a few sticks and a strand of raffia as support round the tops; afford not much water at the root before growth is well advanced.

Asparagus.—Established beds may be afforded a heavy dressing of rotten-manure from the stables and cow-sheds, or seaweed in lieu of or in conjunction with these.

Seed Catalogues are now arriving in numbers, reminding us of next season's labours. Before making out the order-list, ascertain what seeds have germinating power among those left over from last season, sowing a score of each in pots, and place in gentle heat. Those that have germinating power will appear in a week, and if the percentage of plants is good, the stock may be sown, but in every case more thickly than new seeds. Seeds of Lettuce, Cauliflower, Broccoli, Carrot, Turnip, and Parsley keep good for two years, though it is unwise to trust entirely to old seed of any kind.

FRUITS UNDER GLASS.

By MAURICE M. INYARD, Gardener to SIR CHAS. TENNANT, The Glen, Inverlodge, Peeblesshire.

Forcing Pines.—Kipie fruit being desired in May or early in June, the first batch of Queens should be set going at once, and some judgment must be exercised in the selection of the plants. The plants with narrow leaves close together in the centres are those most likely to show fruit early, others with more spreading leaves are likely to make further growth before showing fruit. It is hardly necessary to add that fruiting plants ought to be thoroughly well rooted, and any that have been over-potted, or which from some cause have not made sufficient roots to carry them on satisfactorily, should be turned out of their pots, and have the balls reduced without injuring the roots they have got, and repotting in smaller pots, making use of good turfy loam with the fine soil sifted out of it, and a sprinkling of bonedust. Remove two or three of the lower leaves, and pot rather deeply and firmly. Fresh roots will issue from the stem, and fibres from the old roots, in time to greatly assist in swelling of the fruit. A rather deep hot-bed ought to be prepared in advance, largely or wholly consisting of Oak or Chestnut-leaves. If tanner's bark be used over hot-water-pipes, the depth of the bed need not be more than 18 inches. A bottom heat that ranges from 85 to 90 is desirable. The hot-bed should be so raised that the leaves of the plants are not further than 6 to 9 inches distant from the glass. If tan or a mixture of tree-leaves and stable-manure be used, it will be advisable to only half-plunge the pots at the first, the pots being sunk deeper, and the material made more firm about them when all risk from overheating is passed. The pinery should have a warmth of 65 by night, increasing to 75 in the day-time before admitting air. A very

strong top heat is not needed. While the plants were resting they should have become rather drier at the roots, and care should be taken to moisten the whole of the soil, and to do this with certainty the surface should be lightly stirred before water is applied, the application being repeated the next day. A rather humid air should be maintained, but not so much as to cause much drip from the roof. Plants ripening off their fruit, water should be afforded sparingly.

Succession-houses and the Sucker-pit.—Plants that are of full size which are to fruit in succession to those now started, should still be at rest, and only as much water should be afforded them as will prevent excessive dryness at the root occurring. A temperature ranging from 55 to 65 should be the maximum for these. Cayennes and other late Pines of full size should be similarly treated for some time longer. Late-potted Pines should be grown on steadily, and not subjected to any extremes either at top or bottom, otherwise premature fruiting may occur. The pots should be plunged in a bed having a heat of 80, and a top heat of 65 to 70. Keep the soil only moderately moist. Well-established young plants in small pots may be afforded 5 less heat all round. Strong suckers may be detached from plants on which fruits are ripening and potted, but if the suckers are not crowded, leave them on the plants till they have become much stronger.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltmore, Poltmore Park, Exeter.

Specimen Plants in Tubs and Pots.—Portugal Laurels, *Pittosporums*, *Clethra arborea*, Sweet Gays, Myrtles, &c., natives of warmer climates than our own, require protection from frosts, especially the roots. They should be stored in a sheltered position, with material at hand for covering the tubs when necessary, and care being taken that the roots are not exposed to frost after heavy rains. Some subjects, namely, Citron, Orange and Lemon trees, half-hardy Palms, and Myrtles, should be wintered in glasshouses or well-lighted sheds, from which frost is kept out, giving them plenty of ventilation in mild weather, and not too much water.

General remarks.—The recent rains which have fallen in the western parts of the country have facilitated the planting of large trees and shrubs, which required the soil to be quite moist before the work could be carried out. As severe weather may set in at any date, all planting should be done expeditiously while the land is in a workable condition. In districts where rain fell early in the autumn, and this and other sorts of planting is finished, attention should be given to such trees as require stakes or other supports. For standard trees or fairly large shrubs there is no better means of support than is afforded by guying-wires, for stayed in this manner it is almost impossible for the plants to be moved much by the wind. To enable newly-planted trees or shrubs to grow away in the spring, it is necessary that they should be firmly fixed in the ground. If it be necessary to mulch, the material employed should be of a light character, such as bracken or strawy manure, which exclude frost, whilst allowing moisture to pass away freely. Do not carry out any planting unless the ground is in a workable state, but wait until the conditions are more favourable. Hollies and large Conifers may be left until spring; many of the Conifers, if small, and all deciduous plants, should be planted now.

Specimens.—Hollies, Yews, Retinosporas, Portugal Laurels, Osmanthus, &c., which are grown as standards or pyramids, may be trimmed-in to the desired shape whenever the men can work outside, using a knife rather than the scissor or shears, as there should be no mutilation of the leaves in pruning. *Scalaters* can sometimes be used for the purpose, but it depends on the size of the leaves whether this instrument can be used effectively or not.

EDITORIAL NOTICES.

ADVERTISEMENT should be sent to the PUBLISHER.

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

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

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

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

SALES FOR THE WEEK.

WEDNESDAY, JAN. 1.—
Bulbs, Border Plants, &c., by Protheroe & Morris.
Bulbs, Shrubs, and Trees, at Stevens' Rooms.
FRIDAY, JAN. 3.—
Orchids in variety, by Protheroe & Morris.
(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ENSUING WEEK, deduced from Observations of Forty-three Years at Chiswick—
36.8.

ACTUAL TEMPERATURES.—

LONDON.—December 23 (6 P.M.): Max. 47°; Min. 26°.
December 24.—Fine, sultry.
PROVINCES.—December 23 (6 P.M.): Max. 46°, W. Ireland. Min. 25°, N.E. Scotland.

In scanning the numbers of the *Gardener's Chronicle* for the waning year, we are at once reminded that this is our "Diamond" Jubilee year. On the occasion of our fiftieth anniversary, ten years ago, we reviewed the state of horticulture in 1841 and subsequent years. In the early numbers of the present volume we took a wider range, and summarised the history of horticulture and of garden botany during the past century. We do not know where to look for a fuller account of the evolution of garden plants, and as the articles have already excited interest in foreign countries as well as in our own, we venture to think there is no inpropriety in calling attention to them again: for, though necessarily incomplete, they must prove of great service to the historian and student of evolution.

The occurrence of our Diamond Jubilee also suggests some comments on the state of affairs sixty years ago. Then, and for long afterwards, the space devoted to horticulture in this journal was only a third of what it is now. The *Agricultural Gazette*, then or shortly after incorporated with the *Gardener's Chronicle*, has been completely differentiated. The newspaper which a few of the older readers still remember with regret at its discontinuance, was rendered unnecessary by the establishment of the penny daily papers. Illustrations, which then were very few and far between, are now supplied in every number. The price, originally sixpence, has been reduced one-half. Competition then was practically non-existent; now, we have eight or nine weekly competitors, not including the very numerous lay papers which regularly devote some of their space to gardening matters.

Then, with the exception of the staff and a few experts, contributors wrote purely from the love of the subject or the interest they took in it. Now, writing for the Press has become almost entirely a matter of business. Then, there was an unwritten law of etiquette which restrained writers in

one journal from sending their contributions to another. Now, we see the same writers in almost all the journals, and no one of them can claim exclusive sources of information. The result is a certain degree of monotony and uniformity, which we may be sure editors would avoid if they could.

In spite of all these changes, the *Gardener's Chronicle* has more than held its own, and its circulation is more than three times greater than it was before active competition set in, and it is steadily increasing, probably in consequence of the vigorous emulation to which it is subjected. For this satisfactory state of affairs we are mainly indebted to our contributors, to whom we tender our hearty thanks, and those of our readers.

Passing to matters of general moment, the next event to be specially noted concerned the nation at large. On Jan. 22, 1901, expired our great and good Queen. Practically the Victorian era ceased with the close of the nineteenth century; but we all hope that the progress and development that characterised the last century may be continued in the present era.

The close of the month of January also witnessed the commencement of the discussions as to the appropriate method of celebrating the approaching centenary of the Royal Horticultural Society. The proposal to purchase a large area of agricultural land in a not particularly favourable locality with the view of forming a garden to replace that at Chiswick, was ultimately rejected by a large majority in a crowded meeting; and Mr. ARTHUR STUTTON'S amendment was adopted with practical unanimity.

In the meantime, the lease at Chiswick has still several years to run; so that however desirable at some future time, there is no immediate necessity for the acquirement of a new garden, but rather is there a call for the improvement and development of Chiswick.

The need for a suitable Exhibition Hall has been felt with increasing urgency at each fortnightly meeting. We have availed ourselves of the opportunity of illustrating what has been done in the United States in providing a suitable hall at Boston; whilst the excellent accommodation provided at Ghent is known to many of our readers.

No formal step was taken at the meeting on April 23 in the matter of securing or building a Hall, but it was abundantly obvious that the feeling of the Fellows was very decidedly in favour of such action. Three of the Fellows present at once promised a subscription of £1000 each to that end, and Baron SCHROEDER has since expressed his intention to contribute £5000 for that purpose.

Incidentally, we may mention that a committee presided over by Baron SCHROEDER has, since this meeting, been engaged in endeavouring to secure a suitable site, and that negotiations are still in progress, but are not in a sufficiently forward state for the details to be made public. There is little doubt that could a suitable locality be found the financial difficulties would turn out less formidable than they appear at first sight. In the meantime, under the energetic management of the Secretary, the Rev. W. WILKS, in consequence of the guinea subscription and of the general diffusion of a love for flowers, the Society is prospering beyond all precedent, so much so, that more than

900 new Fellows have been elected during the present year, a circumstance without parallel, we imagine, in the record of any other Society, and a wonderful contrast, indeed, with the state of affairs at South Kensington.

The horticultural exhibitions have been as numerous and as successful as usual. The Temple Show was quite up to the average, if a trifle monotonous, to those who see the show year after year. A similar remark may be made in regard to the Fruit Show held at the Crystal Palace under the auspices of the Society.

The action of the National Rose Society in holding, by permission of the Benchers, its metropolitan exhibition in the time-honoured Temple Gardens, was not only a novelty, but a distinct step in advance, and we are glad to learn that the financial results were satisfactory.

Looked at from the point of view of progress and permanent utility, the Lily Conference at Chiswick, though less numerously attended, was, of its kind, far more important and useful than the other large shows. A glance at the recently-published report of that meeting will suffice to justify this opinion. The reputation of the Society in the future will depend mainly on the record of work done at the several Conferences, and on the excellence of the *Journal* under its present editor, whilst the ordinary shows have necessarily only a temporary value and will soon be forgotten.

The journey of the Duke and Duchess of Cornwall and York, now Prince and Princess of Wales—so important from a national point of view, induced us to devote considerable space and numerous illustrations to our Colonial Botanic Gardens. This was the more appropriate, as, in almost every case, the gardens were visited by the Royal party. It is difficult to exaggerate the benefits which these gardens, in connection with the great home establishment at Kew, confer on agriculture, horticulture, and economic botany generally, not to speak of their value for instructional purposes, and of the local benefits they confer on the residents in their immediate neighbourhood.

During the year a Treasury Committee, presided over by Sir MICHAEL FOSTER, devoted much attention to the subject of the collections at Kew and at the Natural History Museum. Many influential witnesses were examined, and, as might have been expected, considerable differences of opinion were elicited. Nevertheless, the Committee ultimately decided, with two dissentients, to recommend the transference, with some exceptions, of the British Museum botanical collections to Kew. Whether any action will be taken in consequence of this resolution we do not know, but, judging from former enquiries of a similar kind, we should imagine things will go on pretty much as before. It is a pity that the historical and other details relating to Kew given on this occasion by Sir WILLIAM THURSELTON-DYER should not be rescued from the obscurity of a blue-book and made generally available to the public.

The Colorado Beetle, which some years since provoked a scare which happily proved to be baseless, this year did really succeed in establishing itself near Tilbury, and was proceeding to increase and multiply according

to its wont, till it was effectually stopped by the prompt and energetic action of the Board of Agriculture, since which time we have heard no more of this well-looking but evil-doing pest. For all that, continued vigilance must be practised in the coming spring.

A review of the new plants of the year will, according to our usual custom, be given in the succeeding issues.

a most expert cultivator, will be felt as a severe personal one by all who had the pleasure of his acquaintance. In D. T. FISU we have lost not only a staunch adherent of many years' standing, but one who was enthusiastically devoted to his art, and strove assiduously and incessantly to promote it by word and by pen. E. H. KRETYGE was well known as a leader in Dutch horticulture, his extensive knowledge,

found time to collect and co-ordinate the extremely numerous observations that he made and published. Applied entomology is the loser by the death of its most industrious and lucid exponent in the person of Miss ELEANOR ORMEROD. Acting as the intermediary between the scientific entomologist and the practical cultivator, she rendered very conspicuous service both to agriculture and to horticulture. By the death of THOMAS



FIG. 113.—DATE-PALMS AT BORDIGHERA: THE LEAVES TO THE RIGHT TIED UP FOR BLEACHING, BEING FOR USE IN CHURCH DECORATION. (SEE P. 472.)

The Obituary list is long and serious as regards horticulture, as a glance at our Index will show. Here we can only mention a few names, which will suffice to illustrate the extent of our loss. By the death of MAXIME CORNE, the director of the horticultural section of the Jardin des Plantes, Paris, France loses a devoted officer, who, after rendering great service by his investigations with reference to the Phylloxera, in later years tried to do for France what has been so successfully done for the British colonies by Kew. CYRIL, of Cheltenham, was well known as an excellent cultivator, and a prominent exhibitor. The loss of the Rev. H. EWBANK,

his agreeable manners and tact, caused him to obtain great influence with the Dutch Government, and secured for him the respect of his colleagues and friends of other nationalities. KRETYGE was one of the rapidly diminishing band who took part in the ever memorable congress and exhibition of 1866. JOSEPH MEREDITH was known some quarter of a century since as a skilful and eminently successful Grape-grower, but was little known to the present generation. The remarkable career of THOMAS MECHAN has been too recently commented on to render it necessary to advert to it at length again. We can only lament that he never

Rocheford, horticulture has lost one of its most progressive and energetic volarities. His vast establishments, his retarding chambers, and other specialities, have been fully described in our columns; and we allude to his retarding chamber again as constituting one of the most remarkable practical applications of late years, and one that has already revolutionised certain branches of the florist's trade. Nor must we fail to allude to the good work that Rocheford did in promoting the welfare and comfort of his numerous workmen. From this point of view, Rocheford presented a resemblance to a man of widely

different mode of thought we mean the venerable MARTIN SUTTON. Different as the two men were, they were both zealous in promoting the best interests of their employes, and the memory of both will be lauded down, not only as successful men of business, but also as of those that loved their fellow men. Mr. SUTTON'S career was summarised in our columns, and his success should form an incitement to many another to go and do likewise. Mr. A. H. SMEE inherited many of the characteristics of his father, the late ALFRED SMEE, and carried on at The Grange, Carshalton, many of the same kind of studies and experiments that conferred reputation on his father. He, too, worked hard in the promotion of schemes likely to benefit his neighbours. As we write, intelligence reaches us of the death of Sir HENRY GILBERT, the collaborator for half a century with Sir JOHN LAWES. We must allude to his remarkable work in a succeeding issue.

We might cite more names of those who have achieved honour and success in their art, but these will suffice to show in how many different ways horticulture has been advanced in the past, and how varied must be the means taken to secure its progress in the future.

Advance in one department of science is almost sure to beget corresponding progress in others. Thus the marvellous progress in wireless telegraphy, which marks the opening of a new century, would have been justly considered miraculous in former times. Though not directly connected with horticulture, it is sure ultimately to react upon it, and it may be taken as a hopeful sign that the development of science which was so characteristic of the nineteenth century will be enhanced in the twentieth.

* * OUR ALMANAC.—According to our usual practice we shall next week issue a *Gardeners' Chronicle Almanac* for the year 1902. 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.

SUPPLEMENT.—Our illustrations will serve to give an idea of the mildness of the winter climate at Bordighera on the Italian Riviera, a few miles on the Genoa side of Mentone. In this favoured spot Date-Palms are grown, and their leaves are blanched by being tied up, so as to exclude the light (see fig. 113). At Easter and other Church festivals, the blanched leaves are used in ecclesiastical ceremonies, the leaves being sent all over Europe. Bordighera is one of the loveliest spots on the Riviera, and its climate is particularly mild, owing to its sheltered position. The Dates flourish, but do not ripen their fruit.

TRAVELLING FLOWER-GARDENS.—This must certainly be a luxury in "a dry, parched land," but fancy them at the seat of war in South Africa! A correspondent in an evening contemporary writes that when Lord KIRCHNER issued his order against mobile columns carrying pianos, harmoniums, and cooking-ranges (hilo on trek), he made no mention of travelling flower-gardens; yet these last accessories form part of the impedimenta of one general. A private soldier in the division says that he had seen in the morning on which his letter was written, amongst other things, six large boxes containing the general's travelling flower-garden. The writer is an ardent flower-

gardener when at home, but suggests that boxes of biscuits would be preferable to flowers. The names of the flowers are not given, but the general may be more ardent than hungry! and perhaps the satisfaction derived from the sight of home favourites may help to build up the stout heart required at the front.

A LARGE CHRYSANTHEMUM GROWER.—Among the largest growers of Chrysanthemums in Lincolnshire is the firm of Messrs. RANDALL & SON, of Skegness. They flower 40,000 plants under glass, which for fullness of bloom and beauty of development would be hard to beat. The firm send a large quantity of the flowers to Edinburgh, Glasgow, Newcastle, and Manchester, and quite a large staff of assistants is employed in the flowering season. The firm is a large grower of bulbs, including Hyacinths, Tulips, and Narcissus, and is also engaged in the cultivation of Tomatoes, Cucumbers, and Grapes.

"THE PROCESSION OF THE MONTHS."—This novel and artistic publication is issued by Messrs. R. H. BATH, of Wisbech. It takes the form of a Calendar, in which mention is made of the flowers of the month. But this is not all. To each month is allotted an appropriate design, expressively and significantly drawn by WALTER CRANE, and which serves to illustrate the verses written by BEATRICE CRANE when quite a child. "From her verses it will be seen that each season with its ever-changing beauties was fully realised by the child's quick artistic imagination." We commend this novel production to the notice of our readers.

NEW WORK ON BRITISH VEGETABLE GALLS.—An important work of great interest to all naturalists, botanists, and entomologists will be published immediately by Messrs. HUTCHINSON & Co., *British Vegetable Galls: An Introduction to their Study, Collection, Mounting, Classification, &c.*, by EDWARD T. CONNOLLY, with 110 full-page illustrations, all of which have been photographed direct from living specimens, collected specially for this work. The first edition will be strictly limited, and intending purchasers should at once order the book, as the publishers reserve the right to raise the price after the first edition is exhausted.

FROZEN FRUIT.—Experiments are being widely made in France on the preservation of fruit, vegetables, and other agricultural products in a refrigerating apparatus. M. LOISEL, President of the Société d'Horticulture de Montreuil (Seine), showed, at the autumn exhibition of the Société Nationale d'Horticulture at the Grand Palais, Paris, some Peaches splendidly preserved in a refrigerating apparatus, constructed according to the plans of M. DOUINE, an engineer of Paris. These Peaches had been kept, with some fifty-three others, fifty-eight days in the refrigerator. They were the varieties *Mignonne ordinaire*, *Bon Ouvrier*, *Belle Beauce*, *Imperiale*, *Alexis Lepère*, and *Galande*. The experiments will be continued.

MR. S. ARNOTT.—Our worthy correspondent, Mr. S. ARNOTT, was unanimously re-elected chairman of the parish council of Kirkbean on the occasion of their meeting for the first time since their election.

PRESENTATION. At a cake and wine banquet in the Royal Hotel, Dundee, on Monday evening (December 16), a large company met to do honour to Mr. GEORGE TAYLOR, head gardener at Broxmouth, one of the most energetic members of the Dunbar Horticultural Society. Mr. ST. CLAIR CUNNINGHAM, Presi-

dent of the Society, occupied the chair. After the loyal toasts, the Chairman proposed the health of Mr. TAYLOR. Referring to the local society, Mr. CUNNINGHAM contended that the healthy and flourishing condition which it now manifested was in a great measure due to the fostering care it had received at the hands of Mr. TAYLOR. Since his settlement in Broxmouth six years ago, he had evinced the greatest interest in its welfare, and without his aid their annual shows would have been seriously handicapped. To show their appreciation of these services, he therefore asked Mr. TAYLOR to accept of a handsome marble timepiece and ornaments. Mr. TAYLOR cordially thanked the meeting.

SIR JACOB WILSON RETIRES.—Dr. WILLIAM SOMERVILLE, M.A., late Professor of Agriculture at the University of Cambridge, has been appointed to be an assistant secretary to the Board of Agriculture, on the occasion of the retirement of Sir JACOB WILSON, as from the 1st prox., from the public service. Dr. SOMERVILLE has been Professor of Agriculture at Cambridge for two years. Previous to his appointment at Cambridge he was attached to Edinburgh University and Durham College of Science. He is the author of numerous papers on sylvicultural and agricultural subjects.

"OF GARDENS."—Mr. JOHN LANE is publishing, as a contribution to gardening literature, an edition of FRANCIS BACON'S essay *Of Gardens*. It will have an introduction by Mrs. HELEN MILMAN.

BOTANY IN PROVENCE.—M. LUDOVIC LEGRÉ has published a further instalment of his *La Botanique en Provence au XVIIe. Siècle*, in which the chief interest centres round CHARLES DE L'ESCLUSE, better known to English readers as CLUSIUS. He lived from 1526 to 1609, and all his life was a great collector of plants, searching for them himself, and receiving from many correspondents. He was not, like nearly all the botanists of that age, a physician, and so he studied plants from the botanical more than the medical points of view. The memoir is more concerned with the plants collected by CLUSIUS than with his life; but he was evidently a notable man, and the account of him is well worth reading. One special feature in his character was his extreme care to be scrupulously exact in his names of plants; he considered it almost criminal to describe a plant under a wrong name. M. LEGRÉ'S estimate of him will not be considered too high by those who know his works, among "les pères de la Botanique, la figure de CHARLES DE L'ESCLUSE apparaît un premier rang."

THE FULHAM NURSERY OF MESSRS. J. VEITCH & SONS, LTD.—In reference to the paragraph in our last issue, stating that a part of Southfields Nursery, lately occupied by themselves, had been appropriated as a public park, Messrs. VEITCH write to inform us that they are still cultivating the whole of that nursery, and do not give up any part of it till March, 1902, when the greater part of their fruit-tree cultures will be transferred to Feltham, where they have been establishing a new nursery for the last four years. We regret that the information sent us by a Fulham correspondent was inaccurate.

LATE PEARS FROM DEVONSHIRE.—During the present week we have received samples of three late-ripening Pears. The first of these is 'Chamond', a very old, well known variety. The fruit is of large size, obtuse pyriform in shape, richly coloured upon one side; flesh rather dark in tint, not free from grit; flavour moderately good. Le Lectier is also a large

fruit, greenish in colour, of rich flavour and melting flesh, and was awarded an Award of Merit by the Royal Horticultural Society on November 13, 1891. The third variety is much the best of the three sent, and is named President Barabé. The fruits are of medium to large size, obovate in shape, and having a russet-yellow rind: in shape more like an Apple than a Pear, and the eye is almost upon the broad, flat surface of the fruit. Flavour very delicious, flesh juicy and unusually sweet, exceedingly melting, almost totally free from grit. This variety was awarded an Award of Merit by the Royal Horticultural Society on Dec. 11, 1897, when Lord ST. FIELD'S gardener (Mr. W. ALLAN) obtained 1st prize with some fruits shown in competition for Messrs. VEITCH'S prizes, offered for best-flavoured Pears. At the next meeting, on January 1, 1898, the variety was further honoured by a First-class Certificate. It is described as a close grower and good bearer, and the variety is evidently one that may be confidently recommended to the notice of gardeners who feel the need for an increased number of good late-ripening Pears. The fruits sent by our correspondent are ripe now, but in some of the catalogues we read that they will keep good until March.

SIR HENRY GILBERT.—As these pages are passing through the press, we hear of the death, on the 23rd inst., of this celebrated agricultural writer. We must reserve until next week a notice of the work of this indefatigable worker, who rendered the names of LAWES and GILBERT as household words amongst all cultivators of the land.

ROSES FROM AMERICA FOR OUR CHRISTMAS TABLE.—On Monday, the 23rd inst., our table was gaily decorated by nearly a dozen beautiful Roses, which had been cut in America eight or ten days previously. So carefully were these packed that the foliage upon the stems, which were some nine or ten inches long, was not only perfectly fresh, but the blooms were fresh also—fresher, indeed, and better in colour, than many we have seen on exhibition stages. Not one petal from any blossom had fallen, though some of the outer ones were browned. We may add that the system of packing provided that the stems were refreshed by continual immersion in water contained in glass bottles. We are indebted for these Roses to Messrs. F. SANDER & Co., St. Albans, whose representative, Mr. Dimmick, brought them over the Atlantic. The variety is a new one, and a sport from Mrs. J. Pierpont Morgan, itself an American sport from that lovely Tea Rose, Madame Cusin. The colour of the more recent sport is delicate pink with faint line of deeper colour at edge of petals, becoming paler until, at the base of the petals, the colour is nearly pure white. In other characteristics the sport resembles the variety Mrs. J. Pierpont Morgan, and as this variety is now in a good number of English gardens its merits are known. The novelty has been named after Mr. OAKES AMES' mother, "Mrs. Oliver Ames," and it will be put into commerce next year by Mr. J. N. MAY, nurseryman, Summit, New Jersey, U.S.A.

CORDON PLUM-TREES.

DOUBTLESS many readers of this Journal will be pleased to know that the Plum can be successfully grown as a cordon. Many gardeners have attempted it with the best dessert varieties, and have failed. One failure may perhaps have been caused by indifferent cultivation, on the other hand, it is only fair to

add they may have been treated too well; and this, I think, is probable, as cordon-trees of any kind need more attention, for once the roots get gross the trees cease to produce fruit-bearing wood. I may be wrong, but I think the Plum is not a good subject to grow as a cordon; and some of our leading nurserymen who grow fruit largely will not differ from me. I am aware that the soil at Syon is not an ideal one for the Plum, and this was the actual reason that induced me to plant cordon Plums in greater quantity than I should have done, thinking that we could make the soil suitable for trees grown on a restricted system; but no matter how the cordons were treated, we got very few fruits, and I came to the conclusion that to do Plums justice it is best to give more freedom—that is, to get a good crop one must get new wood yearly, and not rely only upon spur growths obtained by stopping summer shoots.

I have seen it stated that Plums closely stopped, that is, both summer and winter pruned, bear grandly. Ours were the reverse, and we tried for some years, and then we adopted a different plan. First we nailed in a few side shoots, and seeing how well these cropped we allowed further extension, and took out every other tree and got still better crops, so that later on we had to give the trees more room, and they are now most profitable; and another year, instead of pruning back, more room will have to be given to the trees that were originally 20 inches apart, and are now 8 feet, and, as I have stated above, will soon need more space.

Some of the dessert Plums make a very strong growth, and doubtless the transplanting has been the means of their fruiting so freely; and though we still stop gross wood should any show at the top of the trees, the stopping is beneficial, as it promotes spur growths lower down the trees. When grown as cordons there is no doubt that, unless the trees are lifted frequently, that is, every three years, they fail. Even then, many varieties we grow in this form were not a success, so that in private gardens I advise the planting of cordon Plums in very small numbers only, where fairly good, viz., Rivers' Early Prolific, which is classed as a kitchen fruit, but owing to its earliness is not at all bad for dessert, if allowed to thoroughly ripen. Another very free bearer is the Stout, a small fruit, and a very free bearer. I need not name more varieties, as we found so few cropped well grown in the way described. I have observed the same thing in Apples and Pears especially.

Apple-trees grown as cordons have been very poor, whereas in the same soil and position, when given more freedom, there have been good results. There can be no doubt whatever, but that trees grown for profit need space to develop, and I think stone fruits such as Plums need it most. Pears do well regularly fed, and lifted at certain intervals, and not pruned. In cold late districts I have seen Apples do well treated thus, but recently in the north I saw some beautiful fruits of Cox's Orange and Ribston grown cordon shape, but the trees were not pruned as described; doubtless soils may be answerable for failures in some instances. *G. Wythes.*

CULTURAL MEMORANDA.

SOLANUM CAPSICASTRUM.

THIS invaluable plant for winter decorations is raised from seed by some gardeners, and by others cuttings are employed. For my part I prefer the latter, although I have raised

good plants from seeds. Cuttings are to be recommended chiefly on account of the certainty of perpetuating a particularly good strain of the plant. They may be inserted after the plants have been pruned back in early spring, young shoots again fit for making cuttings being then obtainable. Take the shoot off with a heel, and roots will form quickly. The cutting-pots should be plunged in a hotbed of about 75° or 80° warmth. When rooted, pot the plants singly and place them in a house or pit having a genial temperature, and leave them therein till established, then remove to a cold frame.

It is my practice to plant this species of Solanum in the reserve garden as soon as the weather makes it prudent so to do; the plants making freer growth than in pots, and insects give less trouble. The points of the shoots should be pinched out twice or thrice in order to ensure a bushiness of habit. The seed should be sown thinly and covered lightly, and as soon as the first rough leaves are observed, prick the seedlings into other pans, or singly into thumbs. The after management of the plants is the same as that pursued with cutting-raised plants. Old plants should not be kept, as their growth is feeble, and insects are sure then to infest them. *H. T. Martin.*

COLONIAL NOTES.

CITHAREXYLUM LUCIDUM.

(THE "FIDDLEWOOD," OR "CUTLET TREE.")

THE flowers of this *Citharexylum* are white and fragrant. When fruiting during August and September the bright red strings of fruit constitute a feature of the landscape around the seaboard of Grenada; when fully ripe they turn black. The wood is hard and is used for working up into posts, the framework of rush-bottomed chairs, and other purposes. For chair-making the White Cedar (*Tecoma leucocylon*) is also called into requisition; the rush in both instances being *Eleocharis interstincta*. Caterpillars divest the Fiddlewood of its foliage, and at this time the tree looks ragged and shabby. Among our wild birds the one known locally as Pied Curlew, or Mocking-bird (*Mimus gilvus*), shows a partiality in feasting upon the fruit. This bird is a pert, vigorous songster, about the size of a thrush, and by eating caterpillars, &c., is a valuable insectivorous bird. The average number of fruit on a raceme taken from a tree at Ballast Ground, St. George's, to-day, total three dozen. Quite young trees flower, many no higher than three feet. *W. E. Broadway, Grenada.*

HOME CORRESPONDENCE.

LATE PEAS. I notice that your correspondent, "A. D.," on p. 111, speaks of Late Queen and Michaelmas Peas as being very suitable varieties for late crops. May I ask him if he has grown the two varieties, or seen them growing side by side? and if so, has he remarked a great similarity between them? I have grown Late Queen three or four seasons, and am very well pleased with it. Last season I was induced to give the variety Michaelmas a trial, and sowed them side by side on the same day. The two rows were treated similarly, and I was unable to distinguish the one from the other, and am under the impression that Late Queen and Michaelmas are one variety only. I should feel greatly obliged if "A. D." and other growers would state their experience on the above subject. *T. Lockie, Huntly (Aberdeen).*

THE DISEASE AND THE MANURING OF POTATOS.—It is often stated that Emuayd manure applied in large quantities at planting time increases the risk of disease attacking the

crop, and I decided to use very little of it. Last autumn I caused to be spread over the plot of ground that was to be planted in the spring a few barrow-loads of soil taken from the rubbish-heap, some wood-ashes formed from green and other branches, and basic slag, and dug the ground one full spit deep. The sets had been stood on their ends in boxes, eyes uppermost, and made strong shoots, and I cut each set into two, with a shoot or shoots on each half, and planted them on April 12, 1901, in drills 6 inches deep, and a slight covering of stable-manure was afforded, together with wood-ashes and basic slag. The rows were 2½ feet, and the sets 11 inches apart, and the soil was drawn over them so as to form a ridge. The plants showed above the soil on May 12, and after the tops had grown about 1 foot they were earthed-up. On October 20 the roots were dug up, and weighed 12 cwt., the tubers being fine, and quite free from disease. The plot of ground measured 212 square yards, and the crop was thus at the rate of 12 tons per acre. The variety was Up-to-Date. *H. L. Hirst, Antley, Settle.*

HELLEBORUS NIGER (CHRISTMAS ROSES).—In good condition this plant is one of the most valued of hardy flowers, for if well grown the flowers will appear in due course in spite of frost and snow. Unfortunately, however, the Christmas Rose is not to be found in good condition everywhere, for while this and that soil is suggested as the best, it is curious to see how poorly the plants do in what appears to be "a good loamy soil of a rather holding nature," which is the one that finds the greater favour, and usually, if it be fairly well drained, it meets the requirements of the plants in respect to soil. But soil is not the all-in-all, for of greater import are position and elevation. The rare occurrences of fine clumps of the Christmas Rose in low valleys and near river banks, is a lesson of some moment. In low-lying land a disease attacks the foliage, causing much loss and enfeeblement, and the remedy is not easy to find. Those who grow the plant for its flowers know something of the value of the leaves remaining intact for as long a time as possible, and indeed without persistent foliage the plant is not happy, nor likely to afford many flowers. The plant is a decidedly shade-loving one. This matter may be tested in this way: Plant a row of the plants 1 foot distant from a Holly or Privet-hedge, with another at 3 feet away, and still another at a further 3 feet, or a total of 6 feet from the hedge. The hedge may be of this height, and for a time cast its shade to the extent given, but this is not enough. In a year from the planting, the value of shade, and of permanent and evergreen shade, as distinct from that of a brick wall, will be proved beyond doubt for that particular locality. But you may go to another locality 50 or 100 feet higher, and the whole thing is contradicted in a moment; and thus the rule-of-thumb practice is ruled out of court. Take two instances quite near to London, that from which I now write, which is some 25 feet above sea-level, and the summit of Sydenham Hill, a few yards from the north tower of the Crystal Palace, the latter at considerable elevation and some 7 miles nearer to Charing Cross than Hampton. In the gardens near the Palace these Christmas Roses were a feature, huge tufts 2½ feet across, and such masses of flowers and foliage that one can scarcely regard the plants as the same. Indeed the mass of foliage was so great that the flowers were unable to find room, and special precaution had to be taken when it is remembered that about a bushel of flowers has been taken from a single yet by no means exceptional specimen. In some parts of Cheshire, Gloucestershire, and around Bath, these Hellebores not merely live, they thrive, and it is a pleasure and not infrequently a revelation to see them. But in all these places, where a rather high position combines with good holding soil, the Christmas Rose may be grown with success. It is, however, where the light soils obtain, and those more decidedly

drained by a sand or gravel subsoil, that special treatment as of shade and deep soil is infinitely more needful; or again, in the chalky districts, and where only a few inches forms the average top soil. In such cases special beds must be made, and these if assisted with shade, intermittent or otherwise, will be found of benefit to the plants. Deep beds of sweet loam, as opposed to the undue use of crude manures, is the thing to aim at. Sunken blocks of sandstone, over a source of grateful cooling in times of heat, should not be overlooked; or again, in the lighter soil and in sandy districts, a heavy addition of clay. Each of these will afford support, and that of a lasting character; and if any group of hardy plants merit special soil and special care, it is these Hellebores. And I speak now for the benefit of those who would care to plant them at the most seasonable moment of the year. *E. H. Jenkins, Hampton Hill.*

CAPE GOOSEBERRIES.—When working in the garden at Hatherop Castle Gardens, Gloucestershire, from 1885 to 1891 under the then head gardener, Mr. Geo. Birch, I had charge of the houses containing Cape Gooseberries. Their cultivation presents no difficulty, and on referring to my diary for 1889, I find that cuttings were taken in the first week of October. The cuttings when rooted were potted, and received repeated shifts, until they came into 11-inch pots, which were stood on the borders of a Peach-house, against the glass partitions and had full sunshine. The plants grew vigorously and fruited freely, the roots coming through the holes at the bottom of the pots and penetrated the border; liquid manure was occasionally afforded. The shoots were tied out thinly. The fruit was served at dessert and much appreciated. One year Mr. Birch exhibited a dish of the fruits in a collection of six kinds, and secured the 1st prize. The fruits make a delicious preserve that some might prefer to the raw fruit, for the reason that the fruits are mostly ripe when there is an abundance of other and choicer fruits. *A. Jefferies, Moor Hall Gardens, Essex.*

GINKGO BILOBA.—It may interest some of your readers to know that there is a tree of Ginkgo biloba (*Salisburia adiantifolia*) in Messrs. Wm. Cutbush & Son's home nursery at Highgate some 60 feet high, perfectly conical in form. Measuring 3 feet up the stem, 3 feet in girth; the bark of this tree resembles that of *Quercus suber*. It would be interesting to know if there are finer trees than this in the country. *W. Wiles, Highgate.*

TAR versus PAINT.—In allusion to this subject, I may state that it is four years since I recommended in the *Gardeners' Chronicle* the use of tar inside and outside of plant-houses—not, indeed, gas tar, but Stockholm tar mixed with petroleum. This was of about the consistency of ordinary paint, and I apply two coats. The mixture soon dries, and does no harm to any of the most tender plants. I have used it on Cucumber, Melon pits and vineries, for plant stages and garden doors and gates, and all wood-work is preserved for twice as long as any kind of paint, and is much cheaper. In glazing I used no top putty, but used small tacks instead to fasten the panes, and then the rabbit was coated with the mixture. *Wm. Smythe, Hove.*

CHRYSANTHEMUM RUST.—This has many times been commented on in the press, but I think now the disease is rapidly dying out. It seems to me it is one of those peculiar plant diseases due to atmospheric influences. We had it here very badly for two or three years, and although no special means were taken, I think at the present time that we are free from it. I expect, if the coming summer should be a wet one, we shall hear of growers being troubled again with the pest. I do not agree with your correspondent, Mr. Chulloch, that artificial manures have any tendency to encourage rust, for we used plenty here during the past summer. It would be a bad artificial manure to cause disease in plants such as rust. *A. J. Long, Wyfold Court*

PEAR GENERAL WAUCHOPE.

THE new Pear shown in fig. 111, from a sketch by Mr. Worthington Smith, was described in our last issue, p. 463. Captain Carstairs' gardener, Mr. C. Ross, has raised some very valuable Apples, but apparently he has not devoted his attention exclusively to them, for the Pear under notice was raised by him from a cross effected between the varieties *Ne Plus Meuris* and *Duchesse d'Angoulême*. The Fruit Committee of the R. H. S. recommended the novelty an Award of Merit on the 17th inst., when fruits were shown at the Drill Hall. The skin is yellowish-green colour, with minute spotting, and the flesh soft, juicy and melting. In favour the fruit partakes of that of *Ne Plus Meuris*, and there is every reason to think that the variety will constitute a valuable addition to late ripening Pears.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

DECEMBER 17.—Present: G. S. Saunders, Esq., in the Chair. Rev. W. Wilks, Geo. Gordon, C. T. Cruyer, J. W. Odell, J. Douglas, E. A. Bowles, H. J. Chapman, and Dr. Masters.

Wood attacked by Bees.—Alluding to a specimen shown at the last meeting, Mr. SAUNDERS said:—"There was some wood shown at the last Scientific Committee meeting, which was unquestionably attacked by the caterpillar of the Goat-moth, *Cossus ligniperda*; but there was also a piece of soft wood, probably Willow, which I find on examination was not attacked by any caterpillar, but by one of the wood-boring bees, probably *Certhra cephalaria*, or *C. chrysothous*. Each nest was separately filled with the remains of blue-bottle flies on which the grubs had fed. The insects had not utilised the borings of any other insect. The wood no doubt was decayed before the bees attacked it, so that they were in no way the cause of the death of the wood."

Banana Disease.—Referring to a specimen previously shown at the Committee, the following remarks by Dr. ASKE PREYER were read:—"For about three years a peculiar disease has been spreading amongst bananas cultivated near Alexandria. The first symptoms of the disease are to be observed in a sudden check of growth, and soon afterwards the leaf-points and the youngest central leaf become black and die. The latter gets rotten, numerous ants and other small animals inhabit the upper part of the stem, and the putrefaction proceeds downwards. The stem does not die immediately, but it is naturally unfit to bear fruit. Very characteristic is the appearance of a great many small, crippled leaves instead of a few, well-shaped, large ones, as is seen in the sound plant."

"A strongly-infected stem dug out of the earth with roots was cut in a longitudinal direction. In the upper part, the youngest leaves were all black and rotten, the outer layers were white and seemed to be sound, and the fourth and fifth layers were dark brown and saturated with a putrid liquid. The lower part of the stem and the root-stalk showed no sign of disease. But on the roots themselves, especially on the root-tips, one could observe small knobs, generally accompanied by an excretion of a resinous substance. Sections of these knobs were first examined under the microscope, and their contents were found to be relatively large egg-sacs of a kind of pest belonging to the Nematodes. The eggs were in different stages of development, even some full-grown Nematodes, possessed with great mobility, had penetrated into the cellular texture of the root. On further investigation, and by comparing infected with uninfected plants, the Nematodes may be stated to be the cause of the Banana disease; therefore the latter is due to an infection of the roots."

"The Nematodes themselves are in shape long, thin, and cylindrical, with a round mouth-end and a fine sharp point at the other end, which is strengthened by a thickening of the epidermis. The whole length is 0.5 millimetres, the maximum diameter 0.1 mm. The pest belongs to the genus *Tylenchus*, but its specific identification has not yet been ascertained. The Nematode resembles very much the *Tylenchus autocadatus*, Zn., which is the cause of a well-known dangerous coffee disease in Java."

"As to the biology of the Banana Tylenchus, it is an interesting fact that the pest not only lives in the roots, but ascends with the watery liquid streaming upward, and is to be met with in great numbers in the upper parts of the stem. I could not, however, find any egg-sacks in these parts.

"The most important question with regard to the Banana-disease is, of course, how to suppress it. In this case the task is rather difficult, because the Nematodes live free in the ground, and seem to have spread over a great area near Alexandria. Experiments are going on by manuring the Bananas with nitrates, and by isolating the plantations by deep canals; but no results have as yet been obtained. In Java the planters cut out the Coffeetrees infected by Tylenchus, and avoid planting Coffee again on the

of opinion that once the fungus has appeared or become established, any attempt at re-planting fresh stock will be useless, unless all former plants are destroyed and a certain length of time allowed to elapse, in order to "starve out" any germs which might be located in places other than the soil itself, and whose presence would cause a return of the trouble. If the vitality of the spores under different conditions could be determined, the result might prove of assistance to any grower, who, as in my case, may have had a total loss of crop, but is desirous of commencing again, if this could be done with safety. Would you kindly have my name mentioned in the *Chronicle* in connection with this matter of Violet disease, as I thereby may be brought into communication with others who have had a similar experience."

Bolicea. Mr. Hanbury also read a paper before the Luncheon Society in 1863 on a case of presumed partile ingensis in *Xanthoxylum alatum* (*Silene Papers*, p. 318). The flowers of the specimen brought are apetalous and appear to be polygamous, but although seed is produced in abundance, not one has yet germinated. In cold and frosty weather the leaves have a curious habit of infolding the margins until the blades are like small cylinders; this position continues until the return of mild weather, when they very slowly resume their normal flat position. Prof. Kerner, in the *Natural History of the Is.*, says that from nine to eighteen buds are formed in the leaf-axil of *Xanthoxylum*, of which the middle one is the biggest, and grows out during the following year into a short or long shoot. The other small buds are kept in reserve in the cortex at the base of the shoot. This may perhaps account for the fact that although the wood is hard and brittle, yet the tree will answer easily to the knife, and can be kept in good shape by pruning."

Clubbing in Cabbage.—Mr. DODDAS stated that the application of gas-lime in spring just before planting did no good at all. A second application in June killed the plant, but did no harm to the Club-root fungus.

Bulbs.—Dr. MASTERS showed from Mr. D. TURNER three bulbs of *Narcissus* one above another on a stem, the lowest bulb being the oldest. It was suggested that they might have been kept out of the ground a long time before planting.

Rhododendron fasciculat.—A specimen from Mr. A. WATERER was shown in which a branch was fasciated, and the "crest" at the top of the branch was succulent and fleshy.

WATERFORD HORTICULTURAL.

DECEMBER 13. The annual general meeting of the Society was held at the Mayor's Office, City Hall, on the above date, to receive report and statement of accounts and also to elect committee and officers for the ensuing year. Mr. Alexander Nelson, J.P., D.L., City High Sheriff, president, was in the chair.

THE ANNUAL REPORT.

The committee having to again lay before the subscribers their annual report, are sorry to say that the increased interest in the Society that they had hoped for has hardly come up to their expectations. They are, however, pleased to report an increase in the list of members.

The committee looked forward to seeing a considerable improvement in the financial state of the Society which would have warranted their again holding a summer show. The Hon. Treasurer's statement of accounts shows a credit balance of £7 5s 8d, including £1 4s 1d carried forward from last year. It will therefore be easily seen that the Society is not in a position to undertake such a liability at present.

The Chrysanthemum show held on November 1 was very successful, the quality of the exhibits being generally excellent, but the number of entries in the classes for cut blooms was not so large as usual, owing to the absence of exhibitors from a distance, consequent on the Society's show following so closely on those held in Dublin, which did not admit of sufficient time for attending exhibitors to compete.

In the vegetable sections the exhibits were very numerous, and of excellent quality; but those in the sections for fruit were few, the absence of exhibitors from a distance being again felt.

The display of field crops, as in previous years, played a prominent part, the number of entries being very large, and exhibits of fine quality. *Local Press*—"Waterford Standard," December 13, 1901.

RICHMOND HORTICULTURAL.

DECEMBER 18. The annual general meeting of this society was held on the above date, Mr. SLEWES COX, M.P., in the chair. The report read showed that whilst the society had, during the past two years, entertained the Royal Horticultural and the National Rose Societies, and in such ways producing remarkably fine shows, the pecuniary results had not been commensurate, and somewhat heavy loss had been sustained. With a view to the reduction of the heavy debts thus created, a dinner at the Star and Garter Hotel had been arranged, at which Leopold de Rothschild, Esq., most kindly presided, and the result was the sum of some £150 was obtained, which had received the debt owing to the bank by that amount, still leaving about £100 to be cleared off. Great credit was given in the chairman's report to Mrs. King, wife of the esteemed hon. sec.

King, Esq., for her efforts through two shows by sales of flowers to assist the Gardeners' Orphan Fund. The result will be the handsome sum of £8 1s 6d. Next year the Lind lady proposes in a similar way to assist



FIG. 111.—PEAR GENERAL WAUCHOPE: RAISED IN THE GARDENS, WELFORD PARK. (SEE P. 171.)

same ground for several years. In Egypt this disease should be carefully watched, as the Tylenchus might perhaps attack other plants; for instance, the newly-cultivated sugar beet."

Violet disease.—Referring to former communications on this subject, Mr. HUTTON, of Donagladale, writes:

"I wish to bring another point to your notice, i.e., the question of infection being carried through the air, and not being dependent upon contact alone. That this is the case, will, I think, be shown by the fact that fresh and healthy plants which I procured from Surrey early in September, and which were planted in fresh ground at least two yards distant from any affected plants, showed signs of the "spot" very shortly afterwards, and in about two months were completely destroyed. Every care was taken to isolate these plants during unpacking and other stages. It would be of importance to know the experience of other growers who have had annoyance from this disease, and whether in any case the culture of Violets has been successfully renewed, and if so, what length of time was allowed to pass before recommencing. I am

Diseased Peach-trees.—Mr. GORDON showed some Peach-shoots in which detached patches on the outer bark were dead. Mr. GORDON suggested that the appearance was the result of the attack of the shot-hole fungus, *Cerospora*. The specimens were referred to Mr. MASSEY for examination and report.

Seedling grapes.—Mr. GORDON also showed specimens of grapes devoid of seed. This was attributed to imperfect fertilisation. Some varieties, it is remarked, are much more liable to imperfect fertilisation than others, and a difference is observable according as the grapes are grafted on a particular stock, or as to whether they were on their own roots.

Xanthoxylum alatum.—Mr. OMBEL showed specimens of this tree, remarking that "The specimen shown is from a large shrub growing at 'The Grove,' Stannore, Middlesex, where it annually develops its fruit and seed. It is a native of S. India, Nepal, Khasia, and China, and the fruit and seed being used by the Chinese both as a drug and a condiment, and known as 'Hwa-tse-son.' A full account is given by the late Mr. D. Hanbury in *Scientific Papers, Notes on China Botany*

the Royal Gardeners' Benevolent Institution. The report was cordially adopted; it is the twenty-seventh annual one.

The society has from its formation invariably held its shows on the last Wednesday in June; it is, however, feared that no show could be held on that date next year because of the Coronation ceremonies, and after much deliberation it has been agreed to hold the next show on July 2, although it will probably clash with the Temple Show of the National Rose Society, but, it is feared, will find the trade and private gardeners very much denuded of plants and cut flowers, and possibly a public satiated with sight-seeing for a time. The committee, on the other hand, hope to secure a specially fine Rose-show, especially in the competition for Mr. Leopold de Rothschild's handsome Cup which he kindly offers; and of a good fruit competition for the handsome cup Mrs. Waechter also kindly offers for collections. The outgoing members of committee and officers were duly elected, and customary notes of thanks accorded.

BECKENHAM HORTICULTURAL.

At a recent meeting of this Society, a lecture, entitled "The Work of a Root," illustrated by lantern-slides, was given by R. J. TABOR, F.L.S., Resident Tutor at the Horticultural College, Swanley. Some knowledge of the root and its functions are necessary to all plant-growers. The subject, Mr. Tabor said, would require at least six lectures to do it full justice. Nevertheless, the most important work of a root, from a practical point of view, was clearly explained. The uses of perpendicular, horizontal, and ramifying root-hairs for anchorage, absorption, and the conveyance of watery sap, were illustrated. A cross-section of a Buttercup-root, from a micro-photograph, showed clearly the large central elongated cells for conveying the watery fluid to the leaves, surrounded by the ordinary cells, and lying in the more richly-elaborated, as returned from the leaves. The root-cap, or shield, to protect the delicate cells multiplying immediately behind, is one of the marvellous provisions of Nature. The necessity of air in the soil, and the devices of plants to supply their roots with it, seem almost to suggest non-existing powers—at any rate, adaptation to environment is very evident. Some remarkable examples of root plants, for orchids and fungi, were shown. Leguminose plants, and their power of fixing free nitrogen from the air on their roots; also roots for absorbing atmospheric moisture, and for attachment and grasping, including many other roots for various purposes, were illustrated.

The next lecture will be given by Mr. H. Cammell, on "Gannas," January 3, 1902.

Obituary.

M. ERNEST BERGMAN.—The National Horticultural Society of France has sustained a severe loss in the death of M. Ernest Bergman, only a few days after M. Blen. M. Bergman was well known in this country, where he resided for a few years, and passed some time in the nurseries of Messrs. Jas. Veitch & Sons in order to prepare himself to assist his father in the management of Baron Rothschild's gardens at Ferrières. For a time also he acted as Paris correspondent to this Journal. After the death of his father, M. Ernest Bergman retired from Ferrières, and occupied himself in organising the annual congresses of the National Horticultural Society of France. He was very active in his services to the Society, of which he was latterly assistant general secretary, and was greatly liked by his friends and associates. M. Viger, the President of the Society, pronounced a discourse on the occasion of his funeral.

ENQUIRY.

Will some of our readers acquainted with S. Africa kindly oblige Mr. Jas. Crabbe by giving a list of seeds of vegetables and for farm that are suitable for growing in S. Africa (eastern provinces). He desires to know whether Scarlet Runner Beans Potatoes, Cauliflowers, Peas, Cabbages, Radishes, Lettuces, Carrots, Parsnips, Kohl-rabi, Swedes, French Beans, Gourds, Cucumbers, Melons, Maize, &c., succeed.

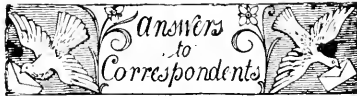
TRADE NOTICE.

We understand that Mr. Robert Blackstock has resigned his position as manager of the Orchard Co., "Seothy," Ltd., and is no longer in the service of the Company. Mr. John Kitley has been appointed manager, and has entered upon his duties.

VARIORUM.

ST. THOMAS' DAY.—St. Thomas, whose festival occurred on December 21, is the patron of masons and architects, from the tradition that a large sum of money was given him to erect a palatial building, but he spent the money on the poor, thus building a palace in heaven. Hence has arisen the time-honoured practice to go "mumping" on this day by the poor. The custom was formerly widespread, and still lingers; the day is known variously as Doling Day, Gooding Day, and Mumping Day. It some places doles are distributed by the clergy, in others the old women and children petition directly, and receive money, bread, or garments. Among the various rhymes existing, the following is the favourite:—

"Wassail, wassail, through the town,
If you've got any Apples throw them down,
Up with the stocking, and down with the shoe,
If you've got no Apples, money will do.
The Jug is white, and the ale is brown,
This is the best house in the town."



ABSORPTION OF MOISTURE BY THE LEAVES OF PLANTS: C. B. Under certain conditions, moisture as vapour is absorbed by the leaves through the under-surface. That this is so, is shown by the turgidity and freshness of the leaves of plants growing in glass-houses, which, after a hot, drying day, have been "damped down" in the evening; but the plants have received no water at the root. The upper surface of the leaves is generally so constructed that no liquid can be absorbed by it.

BLACK GRAVES: A. P. The Vines have probably been weakened by the heavy cropping this year and previously, and the malady called by gardeners "shanking" has set in. You can do little to cure it now. The border should be examined, for the roots may be in bad order, as also the soil, rendering it advisable to lift the roots and make a new or partially new border. It is too late to do this without loss of crop at this date, but it could safely be undertaken next September. Roots deep in a border and none near the surface, and a close, impervious soil, are often the causes of shanking in Grapes. Should the roots and soil be found in good condition, the Vines should be encouraged by surface dressings of artificial manure.

BLACK VARNISH ON IRON HOT-WATER PIPES: A. H. It could be burned off, but that would entail the removal of the plants; failing that, you might try the effect of a very strong washing-soda water, wrapping rags saturated with this round the pipes, and leaving them on the latter for a few hours.

CALLAS: B. W. T. In the material you have sent there is nothing to indicate the cause of the fibrous roots dying away. The injury appears to be due to some detail of faulty

cultivation. The Richardias are gross feeding plants, or we should have thought that an excess of stimulating manures had been afforded. The plants are very easily affected by drought, however, and if they are standing near to a hot water-pipe it would be well to remove them to a position in which the roots will be unlikely to become quite dry.

GLASSHOUSES ERRECTED ON NURSERY LAND: One in Doubt. If not resting on brick foundations and attached thereto with bolts, they form no part of the freehold, and are removable by the tenant.

HYACINTH BULBS FAILING: J. H. The bulb sent appears to be affected with a bacterium—probably *Bacillus hyacinthus septicus*. There is no known cure, and it would be best to burn all suspected bulbs. The bacteria are capable of affecting the common Onion.

INSECTS: Dobbie & Co. *Gordius aquaticus*.

LAWN-SWEEPING MACHINE: W. S. The address was that given when we figured the machine in the *Gardeners' Chronicle*. We would advise you to advertise your wants in this Journal.

MARKET GARDENERS' AND NURSERYMENS' INSURANCE CO.: W. P. The offices are in King Street, Covent Garden, W.C.

NAMES OF PLANTS: W. F. G. *Basella alba*.

COMMUNICATIONS RECEIVED.—F. Spence.—D. Cantwell.—J. W.—T. B. K.—E. C.—F. Sander & Co.—Harrison Weir—A. K. B.—G. A., with many thanks—Canon E.—C. T. D.—A. W. G.—R. I. L.—J. C. Cornell University, U.S.A.—F. A. P.—J. W. B.—W. R.—Karl Schumann, Berlin—L. C. Bennes—J. S.—A. Unger, Japan—L. Bradley, Sydney—W. R. Guilloyle, Melbourne—E. A.—J. O. B.—F. T.—D. T.—R. D.—H. J. C.—A. H.—J. D.—J. C.—W. G.—G. W.—T. H. S.—Dobbie & Co.—G. G.—J. A. L.—R. P. B.

CATALOGUES RECEIVED.

SEEDS.

D. K. BROWN & TAYLOR, 43 and 45, Corporation Street, Manchester.
E. WEBB & SON, Wordsley, Stonebridge, Staffordshire.
FISHER, SON & SHREAY, LTD., Royal Nurseries, Huddersworth, near Sheffield.
HENRY ECKING, Wem, Shropshire.
WILLIAM LARSON, Sutton, Surrey.
W. W. JOHNSON & SON, LTD., Boston, Lincolnshire—Wholesale List of Vegetable and Flower Seeds.
DIKSONS, Chester—Vegetable and Flower Seeds, Seed Potatoes, &c.
PAPE & BERGMANN, Quedlinburg—Novelties in 1902.
DICKSON & ROBINSON, Old Millgate, Manchester.
COOPER, TABER & CO., LTD., 90 and 92, Southwark Street, London, S.E.
F. ROTHEM, Quedlinburg (Germany)—Flower Seeds, Wholesale.

TREES AND SHRUBS.

FISHER, SON & SHREAY, LTD., Huddersworth, near Sheffield—Trees and Shrubs, Roses, Fruit Trees, &c.
GARDNER MITCHELL, Stranraer, N.B.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

48 TREBLED. 48

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

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



A GARDEN IN WINTER ON THE RIVIERA.

